DOCUMENT RESUME

ED 437 022 IR 019 832

AUTHOR	Nanlohy, Phil, Ed.; van Vliet, Ron, Ed.
TITLE	"Get Smart in 99." NSWCEG Annual Conference Program and Proceedings.
INSTITUTION	New South Wales Computer Education Group, Harris Park (Australia).
ISBN	ISBN-0-646-37713-2
PUB DATE	1999-00-00
NOTE	93p.; CD-ROM not available with EDRS copy.
PUB TYPE	Collected Works - Proceedings (021) -- Non-Print Media (100)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Computer Assisted Instruction; Computer Mediated Communication; *Computer Uses in Education; Conferences; *Educational Technology; Elementary Secondary Education; Foreign Countries; Instructional Design; *Instructional Development; *Instructional Innovation; Internet; Learning Activities; Material Development; Multimedia Materials; Optical Data Disks; Professional Development; World Wide Web
IDENTIFIERS	Australia (New South Wales)

ABSTRACT

The following papers are included in these proceedings from the New South Wales Computer Education Group (NSWCEG) conference: "The Origins of a Global Learning" (Al Rogers); "Moving Beyond 'Know How' to 'Know Why': CLICK! Computers and Learning in Classrooms: K-6" (Dianne P. Chambers); "Technology Planning: A Strategic Learning Technologies Plan" (John Dance-Wilson); "Adventure Games and the Problem Solving Process" (John Dance-Wilson); "Develop Innovated Texts Using ClarisWorks" (John Dance-Wilson); "Fast and Free: Creating a Web Class with 'Nicenet'" (Jenny Evans); "Professional Development through the Adoption of Multimedia Authoring in a State Primary School" (Lindsay Freeman); "Planning and Designing an Award-Winning School Website" (Daphene Gonzalvez); "Multimedia Authoring for School Students--Inventing New Possibilities for Demonstrating Student Learning" (Phil Nanlohy); "Multimedia Authoring for School Students: An Introduction to Hyperstudio" (Phil Nanlohy); "Lost Lake Lessons: The Making of a Democratic Learning Environment" (Phil Nanlohy); "Working as a Team across the Internet" (Wayne Richmond and David Heggie); "Leadership in Technology: A Luddite's Metamorphosis" (Peter Scully); "Think Globally...Act Locally: Creating an Online Community Using eGroups--A Hosted Email List Provider" (Nicole Sprainger); "The Laptop Programme at Central Coast Grammar School" (Keith Vallis); and "21st Century Bedrooms" (Joanne Webster). (AEF)

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"Get Smart in 99" Conference Proceedings

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Editors: Phil Nanlohy (CD & Proceedings) Ron van Vliet (Program)
Publisher: New South Wales Computer Education Group, Harris Park, Sydney.

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ISBN: 0-646-37713-2

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The Origins of A Global Learning

Al Rogers, Executive Director, Global Schoolnet Foundation

Abstract: When did the largest and oldest global inter-school learning network begin? No, this is not a history test. It is a history lesson that I hope will lead many of us to a better understanding and appreciation of our own teaching practices as we employ the Internet in our classrooms for inter-school projects.

We begin by peeking at a snapshot that records a classroom scene familiar to many Internet-connected teachers:

Around the classroom, pupils are busily and excitedly writing. The content of their writing varies, but much of it is about their own personal adventures, the incidents that they have experienced inside and outside the classroom.

From time to time they gather into groups to discuss, correct and edit one another's writing. After one or several revisions, the children print out their texts. Sometimes they assemble these texts to create a Class Journal or School Newspaper.

Finally, the students gather their various writings together and send it off to other classes in other cities and towns, across the nation and around the world. In turn, they are just as excited to read... and re-read... the texts they have received in exchange from their partner classes.

Sometimes they become more project or subject focused. The students meet with their teacher to organize a work plan that sets out their plan of work for a certain period. Their project might be content-oriented, in which they gather information and record their observations. Or it might be action-oriented, where they design and build a new fountain or improve their local community in some tangible way. As they follow their work plan, pupils may regularly leave the classroom to observe and to study both their natural environment and their local community. Back in class, they present their results, write, edit and print out texts, and produce journals or newsletters. Finally, once again, they send all this material to their counterparts in other schools. Sometimes, they send along collections of real artifacts, such as maps, photos, tapes, perfumes, seashells, fossils, photographs, local toys, figurines, ribbons and lace, costumes, and other examples of collected artifacts or local memorabilia, and so on. And, once again, they look forward to reading and enjoying the project resources they receive from their partner schools.

This snapshot could be taken today in countless thousands of internet-connected classrooms around the world. The surprising thing about this particular snapshot, however, is that it was taken in 1924 in a rural mountain classroom in Southern France. There, classroom teacher Célestin Freinet and a colleague in distant Brittany began an inter-school exchange that revolutionized their teaching and paved the way for the birth of the global Mouvement de l'École Moderne (Modern School Movement). At his death in 1966 this global learning network involved over 10,000 schools and 33 nations and today remains the largest technology-based learning community in history.

Freinet and his pioneering colleagues started with printing presses and the French postal network, and they adopted new technologies as they became available. However, as the history of this long movement reveals, their practices were never dictated by, or even depended on, technology. They were based on good and sound teaching practices... and then tested, refined and distilled in decades of collaboration, reflection and success.

As we see our own classrooms and students in this 75-year-old snapshot, it should remind us that good teaching is timeless. **The true power of what we do in our classrooms depends less on**

technology, and more on what we do with the technology we have. It's also my hope that the historical and pedagogical legacy passed on to us by Freinet and the Modern School Movement will help us in our efforts to move our own inter-school networking projects from the realm of "high tech fad" to the status of recognized and accepted teaching techniques.

The writings of Freinet and his wife, Élise, have been translated into 17 languages and have influenced generations of teachers and students on every continent, yet their work is largely unknown in the English-speaking world. The information in this column is based on a chapter in *Brave New Schools: Challenging Cultural Illiteracy* (New York: St. Martin's Press, 1995) by Dennis Sayers, written with Jim Cummins.

A search of http://www.dogpile.com for Célestin Freinet hit on numerous relevant Web sites around the world (mostly French), but only a few passing references in English. A few highlights:
http://www.freinet.org : International Federation of the Modern School Movement (in French)
http://www.freinet.org/icem/history.htm: A brief, readable history of Freinet's movement (in English)
http://orillas-web.upr.clu.edu/english.html: De Orilla a Orilla (From Shore to Shore) in Puerto Rico was one of the earliest (1984) electronic intercultural networks to be based on Freinet's work and today remains a multinational and multilingual network faithful to Freinet's work.
Resources related to inter-school networking
http://www.iearn.org/iearn/circles/lcguide : The Learning Circle Teachers' Guide written by Margaret Riel, one of the earliest researchers on electronic learning networks.
http://www.iearn.org/iearn/circles : I*EARN exemplifies Freinet's Modern School Movement.
http://www.globalschoolhouse.org/project: The Global Schoolhouse's project registry will help you find a variety of inter-school projects. Also look at their Web tutorial at http://www.gsn.org/web.
http://www.autodesk.com/foundation/: The Autodesk Foundation can help you design, manage and evaluate project-based learning activities found in inter-school exchanges.

Moving beyond 'know how' to 'know why':

CLICK! Computers and Learning In Classrooms: K-6

Dianne P. Chambers: University of Melbourne, d.chambers@edfac.unimelb.edu.au

Abstract: There are many sources of PD for K-6 teachers that help regarding *how to use computers* ('know how') but much less is available on *how to use computers effectively in classrooms to enhance learning* ('know why'). Members of the Department of Science & Mathematics Education at the University of Melbourne have developed a resource for this purpose. Included in *CLICK!* are 36 PD modules and 30 associated Case Studies illustrating how computers can be used to enhance learning. This project involved over 100 teachers and academics involved in teacher education from Australia and the USA and has resulted in a powerful resource to support K-6 teachers in integrating computers into their classrooms.

Introduction

Although there is plentiful PD available for teachers about *using computers*, there is a much more limited offering of PD about *using computers effectively to enhance teaching and learning*, thus there was a need to develop a professional development resource for K-6 teachers to enhance teaching and learning in classrooms. This move from having the 'know how' of working with computers and software to a deeper understanding, or 'know why', about using computers in the classroom to support learning is a significant one if teachers are to successfully integrate computers into their teaching practices.

In response to this need *CLICK!: Computers and Learning In Classrooms: K-6*, a professional development resource for teachers about effective uses of computers in the K-6 classroom, was developed by members of the Department of Science and Mathematics Education (DSME) at the University of Melbourne, Australia. The Department of Science and Mathematics Education teaches subjects in computer education and has considerable experience in offering professional development (PD) for teachers. A key to the development of the resource was consultation with many classroom teachers and principals. At each stage of planning and development an expert group of teachers and principals from K-6 schools advised on the content, form, and look of the resource. In addition, academics (teacher educators) and teachers from Australia and the USA contributed to the resource. In total, almost a hundred academics and teachers contributed. The project was undertaken over 18 months, starting mid-1997 and completed in late 1998.

What is CLICK! ?

CLICK! comprises 36 professional development modules, 30 case studies about the effective use of technology in K-6 classrooms, and over an hour of video and multimedia resources. The Professional Development modules on *CLICK!* address issues related to using technology effectively in the K-6 classroom. The Case Studies describe how K-6 teachers are using technology to enhance the teaching and learning processes in their classrooms. Most Case Studies include examples of children's work, both paper-based and electronic. Videoclips show interviews with teachers addressing issues raised in the PD modules and Case Studies, and classroom situations where technology is being used effectively. In addition there are three *Virtual Classrooms* which are a virtual reality environment (using QuickTime VR) that enables a viewer to 'look around' the classroom, seeing what children are doing, catching a little of their discussion and observing how the computers in the classroom are being used for curriculum purposes.

In brief, *CLICK!* comprises:

- 36 Professional Development modules
- 30 Case Studies
- 3 Virtual Classrooms
- an hour of video clips

Professional Development Modules

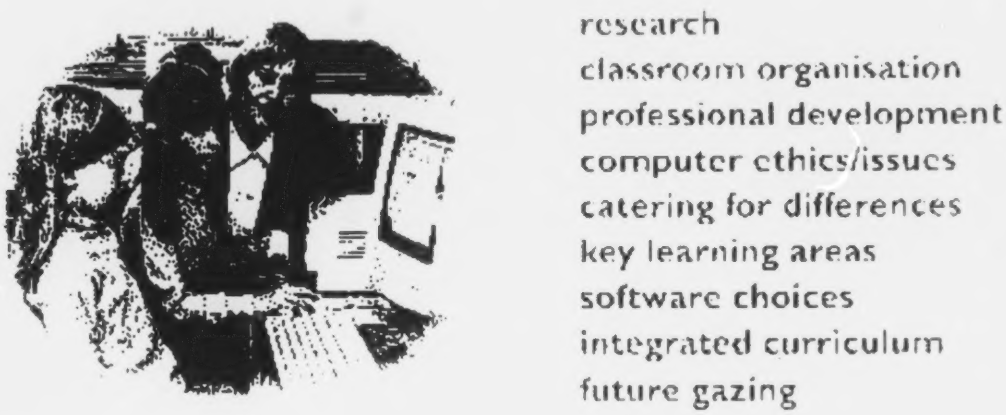

research
classroom organisation
professional development
computer ethics/issues
catering for differences
key learning areas
software choices
integrated curriculum
future gazing

Figure 1: Areas of Professional Development modules offered on CLICK!

The Professional Development (PD) Modules cover a range of topics within nine broad areas (Fig. 1), with a number of PD modules within each of these areas (Fig. 2). For each Professional Development module there is text of the module (which is also available in portable document format [PDF] for printing), a PowerPoint presentation of the PD module to support a teacher deliver professional development to their colleagues (also available in PDF), and each Professional Development module is hyperlinked to relevant Case Studies and video clips.

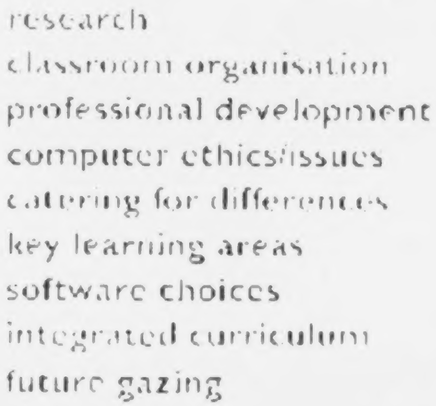
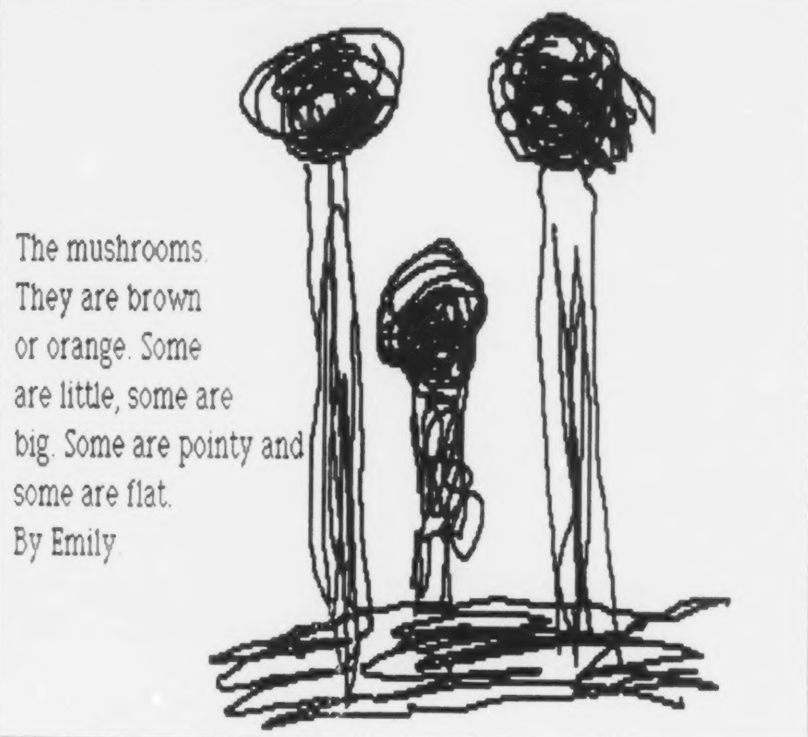

research
classroom organisation
professional development
computer ethics/issues
catering for differences
key learning areas
software choices
integrated curriculum
future gazing

Figure 2: Professional Development modules in the 'Integrated Curriculum' area.

Case Studies

There are 30 Case Studies which have been prepared by practising teachers. The Case Studies cover all major curriculum areas and levels (junior, middle and senior) of K-6 schools. The 'units' described in the Case Studies range from a single lesson to a term long unit. Sections of each Case Study include the curriculum focus of the unit, the teacher's planning for the unit (including lesson plans), the teacher's reflection on the unit, hyperlinks to related Professional Development Modules and related video clips and examples of children's work (Fig. 3).



The mushrooms.
They are brown
or orange. Some
are little, some are
big. Some are pointy and
some are flat.
By Emily

Figure 3: An example of a child's work using an eMate computer on a field trip to the Botanic Gardens (from the 'Life and Living' Case Study).

Video

There is almost an hour of video on the CD-ROM including the *Virtual Classroom* (as described below), video provided by the 'Apple Classrooms of Tomorrow' project and video from the 'Technology In Learning and Teaching' (TILT) series developed by the New South Wales' Department of School Education.

In each of the three *Virtual Classrooms* the user can explore the classroom using QuickTime VR (virtual reality) technology. The user can look around the classroom from a central location and zoom into areas of interest and click on aspects of the image of interest to see a video clip of what is happening. Video taken in these classrooms shows exemplary use of technology and illustrates aspects of classroom management that facilitate effective uses of the technology to enhance learning. The three teachers from these classrooms discuss how different models (two computer classroom, computer laboratory, and a mixed model combining both computers in the classroom and a computer laboratory) work for them and the strengths of each model and classroom management techniques that make them work well.

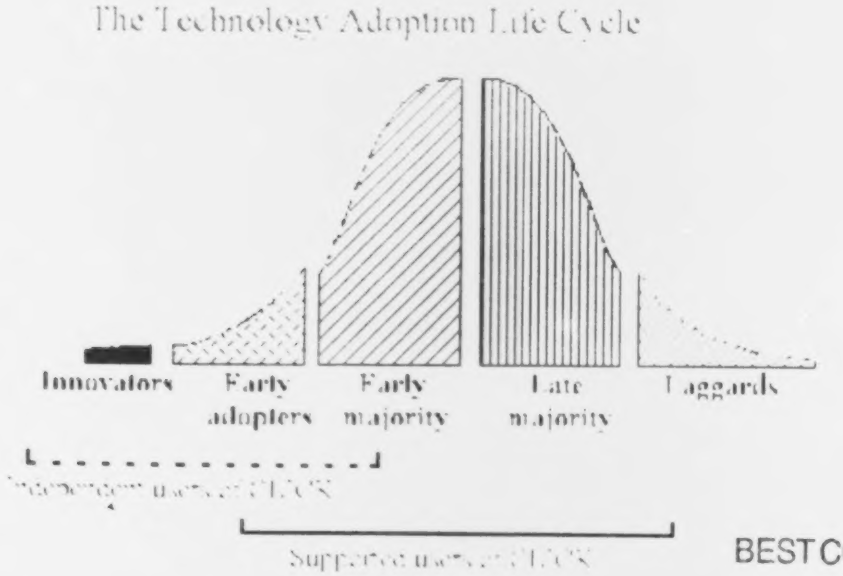
The *CLICK!* Model

Based on the university's extensive experience with teacher training and professional development and the expertise of the consultancy group of teachers and principals, we were confident to assume that:

- Some teachers know about using technology in the classroom;
- Most teachers want to know about using technology in the classroom;
- Teachers learn well from other teachers in their own school environment.

In this situation, and given the magnitude of the problem of skilling the teaching workforce to use technology for curriculum goals, it seemed most valuable to provide a resource that could be used individually but also facilitated school-based professional development. Site-based, peer-assisted professional development that is supportive of a clearly articulated vision for children has been found likely to raise student achievement (Rényi, 1996). That this 'teach the teacher' model is effective has also been found in Australia for professional development involving information technology (Smart, 1996). *CLICK!* therefore aims to support professional development which is presented by a colleague in the school environment and which is focussed on enhancing student learning. It can be used individually, but it specifically aims to support 'technology leaders' who, after expanding their own knowledge of an area using *CLICK!*, will provide professional development for their colleagues.

Using the language of *Teachers and Technology: Making the Connection* (OTA, 1995) these technology leaders are the innovators or early adopters (Fig. 4), while most teachers fall into the early majority and late-majority groupings. It is envisaged that in the first instance *CLICK!* will be used by technology leaders to strengthen their own knowledge and to support them in delivering professional development to their colleagues. The PowerPoint presentations and the associated print materials can be used as they are or easily modified. Further use of *CLICK!* by some teachers in the majority groups is envisaged to follow up what has been learnt by exploring the Case Studies and perhaps undertaking related Professional Development modules by themselves.



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Adapted from Teachers and Technology: Making the Connection, OTA 1995

Figure 4: The Technology Adoption Life Cycle showing where users of *CLICK!* would fit in this life cycle.

Conclusions

There is ever-increasing pressure for teachers to include technology in their classrooms. Most current teachers completed their formal education before computers were a standard part of the classroom experience and thus many teachers are uncertain about using technology in their teaching. Other teachers, however, have grasped the potential that technology offers for enhancing learning. They use technology extensively both in their lives and their classrooms. For another large group of teachers the mechanics of using computer technology remains a barrier. These three groups of teachers have different needs and will play different roles in transforming education.

There are many resources and professional development sessions offered to teachers about how a particular piece of software or hardware is used. This is a major need as teachers who do not feel comfortable with a tool are unlikely to use it in their classroom or to use it well. However, considerably less is available on using technology effectively in the classroom to enhance children's learning and this is what *CLICK!* addresses. Supporting teachers from the stage of having the 'know how' of using the technology to having the 'know why' of when it is appropriate to use technology and the most effective ways to use technology to support children's learning is the goal of *CLICK!*

Feedback from teachers thus far is that there is a real need for a resource such as this. Teachers particularly like the balance between the Professional Development modules, where background information and research findings are presented, and the Case Studies, where classroom teachers describe and reflect upon how they have successfully used technology to enhance learning in their classroom. The inclusion of lesson plans and electronic examples of children's work enrich these Case Studies in a way that is not possible in a textbook. Another feature strongly praised by teachers is the material provided that support teachers in presenting professional development sessions to their colleagues. The inclusion of PowerPoint presentations for each Professional Development module and printable versions of all Professional Development modules and Case Studies make the resource easy for the Professional Development coordinator to use to share knowledge through a school. The major strengths of the resource reflect those features that the teachers in the development group defined as important to them, which reinforces the practice of having members of the target audience as part of the development team for a project such as this.

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OTA (1995) *Teachers and Technology: Making the Connection*. U.S. Congress, Office for Technology Assessment.

Renyi, Judith (1996) *Teachers Take Charge of Their Learning: Transforming Professional Development for Student Success*, The National Foundation for the Improvement of Education. Available: http://www.nfie.org/takechar.htm [1999, June 2].

Smart, Laurence D. (1996) *The KITTEN experience: Action research into the ACT's school-based information technology train-the-trainer program*. ACEC 96 Australian Computers in Education Conference, Canberra, April 1996. Available: http://www.eliz.tased.edu.au/acec96/disk1/smart.htm [1999, June 2].

Technology Planning: A Strategic Learning Technologies Plan

John Dance-Wilson; Technology Adviser, DET

Abstract: A whole-school technology plan is a statement of the beliefs, values and goals of a school community working co-operatively to develop a technology presence integral to the operation of the school. The effective use of technology in the learning process can best be achieved by taking an integrated approach to change involving the examination of pedagogy, curriculum and organisational structures in the school community. The technology plan ensures the provision of appropriate access; adequate time for teachers to explore its use and develop necessary skills through school focussed training and development.

Introduction

Each school needs a clearly articulated technology plan that describes the technology goals, expected outcomes and performance indicators and a strategy for implementation of the plan. School structures and culture will play an important role in setting expectations, providing access and encouraging innovative approaches to learning using technology. Principals and executives play an important role in moving school communities towards effective use of new technologies. Communication of the plan to the whole school community will aid in the understanding and cooperation from all stakeholders ensuring successful implementation.

This program is designed to support schools through the technology planning process.

The program aims to provide:

1. an introduction to the development of a whole-school technology plan;
2. processes to clarify school management and infrastructure that together create a technologically rich school environment; and advice on how such a plan might be implemented.

This type of plan is a map to guide a school in the continued introduction and evolution of learning technology across the school.

It outlines the school's goals for incorporating technology into the school environment.

The plan will assist in identifying what is needed to achieve the stated goals.

Traditional Wisdom and Certainty

How often has traditional wisdom proved incorrect about predicting the future? The following predictions from prominent persons (who were acknowledged as leading authorities of their own times) are offered to set the scene by urging you not to rely on 'conventional wisdom' at times of rapidly emerging socio-cultural change.

I think there is a world market for maybe five computers
(Thomas Watson, Chairman IBM, 1949)

Computers in the future may weigh 1.5 tons
(Popular Mechanics, forecasting the relentless march of Science 1949)

Everything that can be invented has been invented
(Charles H. Duell, Commissioner, US Office of Patents 1899)

'So we went to Atari and said "Hey, we've got this amazing thing, even built it with some of your parts, and what do you think about funding us? Or we'll give it to you. We just want to do it. Pay our salary, we'll come and work for you." And they said, "NO". So we went to Hewlett Packard, and they said, " Hey, we don't need you. You haven't got through college yet."
(Apple Computer Inc. founder Steve Jobs on attempts to get Atari and Hewlett Packard interested in his and Steve Wozniak's personal computer)

Strategic Learning Technology Plans: A Quick Overview

What Makes a Good Learning Technologies School

- A Strategic Learning Technology Plan is your own school vision.
- School Strategic Learning Technology Plan outcomes are clear.
- Staff is responsible for Strategic Learning Technology Plan and not one person.
- Staff have ownership of the Strategic Learning Technology Plan.
- School learning technology needs are developed according to school plans.
- Resources are purchased according to needs.
- Professional Development is determined according to your school needs.
- Technology use follows staff expertise.
- Have patience with staff progress.
- Checklists of skills are developed in stage levels.

In a nutshell

- Learn the basics first. That's the starting point.
- Work in teams to learn software and develop ideas.
- Visit other schools and ask questions.
- Don't reinvent the wheel - learn from others and adapt to your needs. Search the web for examples of plans and scope and sequence checklists.

Getting Started

The school needs to develop a representative Strategic Learning Technologies Task Group to oversee and coordinate the Strategic Learning Technologies Plan.

A School Strategic Learning Technologies Plan

The following is meant to be a point form suggestion of what should be in a school Strategic Learning Technology Plan.

- **Introduction**
  - o Vision Statement
  - o Goal Statements

- **Audit**
  - o Hardware Audit includes age, quantity - Use OASIS assets register as a starting point
  - o Peripherals Audit includes printers, scanners, cameras
  - o Software Audit includes versions, licences, compatibility,
  - o Network includes both Curriculum and Administration development
  - o Internet Access includes availability, management, ISPs, Web Page development...
  - o Teacher Capabilities/Professional Development
  - o Student access and Codes of Behaviour
  - o Maintenance

- **Resources**
  - What Operating Systems?
  - Classroom computers, laptops, computer pods, computer laboratories, or combination
  - Lease, purchase, rollover under warranty, ...
  - Networking - quantity, security, ...
  - Printers - standalone, networked, inkjet, laser, colour...
  - Peripherals - scanners, digital cameras, external drives
  - Security - theft, misuse, viruses, vandalism...
  - Software - licenses, basics selection, versions etc

- **Curriculum**
  - Developing a scope and sequence curriculum plan.
  - Skills checklist
  - Hierarchy of software types - multimedia -> simulations -> drill and practice
  - Look at needs across school – all staff and ALL students.

- **Teacher Professional Development**
  - Teacher Capabilities - survey and assess
  - Professional development needs - school, individual, specialised
  - Resourcing Professional Development from within or outside school

- **Student Use**
  - How and when - supervision
  - Code of Conduct for Computer Use
  - Viruses - home and school
  - Protection of Operating System and file management

- **Maintenance**
  - School based, outsourced, ...
  - Warranty, non warranty equipment, ...
  - Problem solving and reporting of problems.

- **Time Frame for developing Learning Technology Plan**
  - Long term (3 - 5 years) and short term (this year) timeline
  - Responsibility for Learning Technology initiatives
  - School commitment - School Mission, School Council, Staff, financial commitment, resource management, ...
  - Current year
  - Next 3 years

- **Recommendations**
  - Recommendations need to be achievable
  - Review process
  - At least annually
  - This is a living document
  - Technology changes rapidly

The following web site provided the bulk of this planning overview.
http://www.wimmera.net.au/horsh298/techplan.htm

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Ten Criteria for effective Technology Plans

1. Call for yearly review
2. Focus on applications, not the technology - the plan specifies what staff, students and administration should be able to do with technology.
3. Go beyond buying technology to teach about technology - Do you need $2000.00 multimedia computers to teach keyboarding?
4. Technology is more than computers - plans should include utilisation of other devices e.g. video, sounding recorders and editors, digital camera, scanners, concept keyboards etc.
5. Stress integration of technology into the curriculum
6. Tie technology plans to staff development plans
7. Make technology part of the daily cost of doing business
8. Effective technology plans have critical attributes based upon research
9. Effective technology plans are developed by staff members that will implement the plan
10. Effective technology plans focus on a vision of the future

John See
Minnesota Department of Education
The Computing Teacher, Vol. 19, No. 2 1992

Technology Planning Process tools

1. Technology Snapshot
2. Technology plan overview
3. Technology templates
4. Management strategies
5. Identifying and training key personnel
6. Students Outcomes etc
7. Implementation Timeframes
8. Financial planning

Technology Snapshot

Instructions

Distribute this audit to a range of school personnel. The audit is a quick and easy tool to gather a snapshot of a range of technology based issues.

Evaluating your Audit

Tally the responses in each of the stage columns. If the majority of responses are:

Stage One/Two

If this is where you are up to, there is a significant amount of work required to improve implementation and integration of technology in your school. You may need to spend some time exploring possibilities in order to help you to identify and clarify all the issues and considerations involved.

Stage Three

If you are mostly at stage three, this is a strong indication that you are on the right track and effectively developing integrated learning technologies. Concentrate your planning on the areas where you are still in stages one or two. For many schools, stage three may be considered an acceptable level to reach when budgets are tight. Stage four may then be planned for later when funds are available.

Stage Four

If you are mostly at stage four, you have probably had a technology plan in place for some time and are implementing it very well. You are strongly positioned to assist other schools in their planning and development of technology across the school.

Technology Snapshot

Category	Level of Effective Utilisation of Learning Technologies			
	Stage 1	**Stage 2**	**Stage 3**	**Stage 4**
Learning Technologies Planning	School identifies individual or group to implement learning technologies awareness scheme.	Plan drawn up to implement learning technologies & information management skills across the curriculum. Plan presented to all stakeholders.	Learning Technologies Implementation Plan developed & incorporated into school strategic development plan. Plan evaluated and updated regularly.	School-based learning plans form basis for District learning technologies plans.
Learning Technology Competencies for Teachers	Some teachers use learning technologies for personal use & as a teaching tool, generating interest in technology amongst others.	Teachers may be required to use software purchased specifically for certain key learning areas.	Teachers use learning technologies to develop resource materials & in student assessment & reporting. Staff learning technologies competencies mapped & professional development targeted to identified needs.	All teachers competent users of learning technologies for education & administration. Professional development targets ongoing or emerging needs.
Use of Learning Technologies in Teaching & Learning to Achieve Desired Outcomes	Students use curriculum-based software as a learning aid in specific subject areas eg. Reading & maths tutors; games; drawing/painting; talking books.	In addition, students use non-curriculum-specific software to enhance their learning, eg. word processing; databases; spreadsheets; desktop publishing; CAD; music; simulations, etc.	Students progressively gain routine access to more sophisticated forms of learning technologies from multiple access points within their learning environment, eg. CD ROM; Internet.	Students & teachers use learning technologies as a routine part of learning & teaching in most or all curriculum areas. This use is built upon a shared understanding by teachers of the most effective ways to use learning technologies to improve student learning.

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Category	Level of Effective Utilisation of Learning Technologies			
	Stage 1	Stage 2	Stage 3	Stage 4
Learning Environments	Learning environments allow for limited learning technologies involvement with rostered access to available learning technologies equipment.	Greater flexibility in design of learning environments to allow for integrated use of learning technologies in achieving targeted curriculum goals. Greater student-centred learning & collaborative practices.	Learning environments expand by facilitating structural change in relation to time, staffing, faculty, intra-school collaboration. Consideration given to location of networking outlets/telephone lines.	Global classroom considered a part of normal learning environments. Students able to access information "on demand" and teachers able to draw on learning resources when & where required.
Software Acquisition	Software acquired on ad hoc basis, reflecting individual teacher interests & needs. All software maintained by individual teachers & used by means such as floppy disk.	Software ordered & maintained primarily by senior staff & stored within specific learning areas.	Software purchases coordinated in consultation with teachers and/or technical staff. Software & library functions may be available through an integrated menu system on a network file server.	Software mapped against curriculum requirements on a whole school basis. Software purchases targeted to curriculum needs. Software & library functions accessible from any authorised user at school or home.
Developing Information Management Skills Using Learning Technologies	Learning technologies & information skills used in some curriculum areas on ad hoc basis. Technology competencies developed primarily via discrete technology based classes.	Use of learning technologies & information skills beginning to be integrated in all KLAs. Learning is student-centred. Opportunities develop for collaborative learning & planning between teachers including librarians.	Available learning technology & information resources integrated. Emphasis given to sequential development of student learning technologies & information management competencies in all KLAs.	Learning technologies & information management skills become integral part of curriculum.

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Category	Level of Effective Utilisation of Learning Technologies			
	Stage 1	Stage 2	Stage 3	Stage 4
Technology Technical Support	School relies on interested/skilled staff member or parent to help maintain resources.	School identifies individual(s), & provides release time, to undertake technical support duties. Basic trouble-shooting course provided for all staff.	Technician appointed as technical support for equipment. Teaching staff devise system for set-up & usage of specific learning technologies.	Consideration of sharing of full-time technical support between schools established on a cluster basis.
Learning Technologies Equipment	Small numbers of stand-alone computers available for classroom use, providing limited access to staff & students.	Establishment of computer facilities to enable each class access to more than one computer. Staff has access to at least one computer. Use of stand-alone video and sound equipment. Installation of CD ROM equipment in Library.	Flexibility exists in use of resources resulting from acquisition of portable learning technologies equipment. Greater staff & student access, with ability to take computers home. Integration of video and sound equipment. Expansion of whole-class facilities.	All students & staff have routine access to learning technologies resources when & where they need it for all educational & administrative needs.

Adapted from "Plan for IT in Teaching & Learning for A.C.T. Schools: 1997 - 1999"

Creating a Technology implementation plan

Once you have identified all the components you require achieving the school's technology goals, you need to prepare a plan outlining how you intend to implement these components and a timetable detailing when it is to happen. *Figure 1* illustrates the various steps involved in creating a Technology Implementation Plan.

What to do

In preparing the Technology Implementation Plan the Planning Team should:

3. **List all tasks**

This list will include all tasks, which must be undertaken to implement the various components of the Technology Plan.

11. **Identify dependencies between tasks**

You need to identify which tasks are dependent upon the completion of other tasks.

9. **Determine task implementation times**

Estimate the length of time required to complete each task.

✣ **Plan task sequences**

Based upon the task dependencies, devise a sequence in which the implementation tasks should be undertaken.

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❖ **Investigate implementation options**

After you have determined **what** needs to be done, consider the various options for **how** you can implement these requirements. Various options for staging the implementation over a several year period may present suitable alternatives. For each option examine the cost, the benefits and the impacts on resources, other facilities etc.

- **Select implementation solution**

From the presented options, select the solution, which offers the best cost/benefit alternative.

❖ **Determine milestones**

Identify the key milestones of the implementation; for example, LAN installed, training completed, computer lab A operational, etc. Establish criteria for how you wish to measure the success of the implementation of each task or series of tasks.

❖ **Identify the resources required**

Determine who is to be involved in the implementation of each task. Consider both internal and external (contract) resources. In addition, determine other resources (for example, building facilities, computer resources, etc) which may be required for the implementation.

10. **Establish timeframe**

Map out when each task is to be implemented. Take account of task dependencies and sequencing, resource availability, holidays, budget etc.

❖ **Determine responsibilities**

Identify who is to be responsible for managing the implementation of each task.

❖ **Review progress and update implementation plan**

Throughout the implementation plan allow time and resources to monitor progress according to the plan and update the plan as required.

Other considerations: change management

Implementing or enhancing technology can be disruptive. When planning your implementation, ensure that all staff affected by the implementation is familiar with what are happening and the benefits that will ensue. You should have a planned program of staff professional development to provide awareness, familiarity and skill in using the new resources, as staff need to feel confident about their ability to use the learning technologies.

In managing this resulting change in the school's teaching and learning environment, you need to also ensure that effective support is provided to overcome any problems and difficulties during the implementation period.

Maintaining the Technology plan

Throughout the year various events may impact the school's technology goals. The availability of new learning or computer technologies, availability of additional funds and acquisition of new resources, may contribute to changes in priorities, timetabling or objectives. Consequently, it is important to periodically review the Technology Plan, monitor the progress of its implementation and update the plan as appropriate.

Planning is an ongoing process. You must continually incorporate updated information into your plan and realign it to your overall Technology goals. In addition, you should start to plan for future growth, anticipating new requirements and examining replacements for existing equipment and software.

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A core team (a subset of the Planning Team) should be responsible for reviewing the plan at regular intervals, or upon a major event, and updating it as appropriate.

Implementation Timeframes

From Management Strategies and Key Personnel exercises, track the timeline for implementation of these tasks whilst recording the personnel responsible for each. Is there a base of responsibility?

	Term 1	Term 2	Term 3	Term 4	Term 5 -8
T & D					
Hardware / Equipment					
Infrastructure / electricity / cable					
Security					
Management					
Environmental					

Investigating Opportunities for Improvement

The audit and scale of strengths build a picture of where you are now. Considering these, brainstorm and record as many ideas for improvement that your team can come up with. Sheets with blank columns are available if you wish to add different categories.

Key Personnel - How is it done now? - How can we work smarter?

1. List the key personnel who administer, maintain and develop school technology. Under each one list the jobs each one performs in **blue** pen.
2. With **red** pen identify other personnel who could be trained to take on some of these roles to distribute both the knowledge and the workload.

Management Strategies

Develop appropriate methods of support based on the list of strategies and infrastructure required to achieve your school's technology goals.

Hardware	Software	T&D	Security
eg. Trouble shooting processes (i) Laminated instruction cards (ii) Who to report problems to?	eg. Software register	eg. mentors and coaches - one per year group or KLA or faculty etc	eg. Physical - lock away - keys and locks Logical - anti-virus - access security

FIGURE 1
Creating an Implementation Strategy

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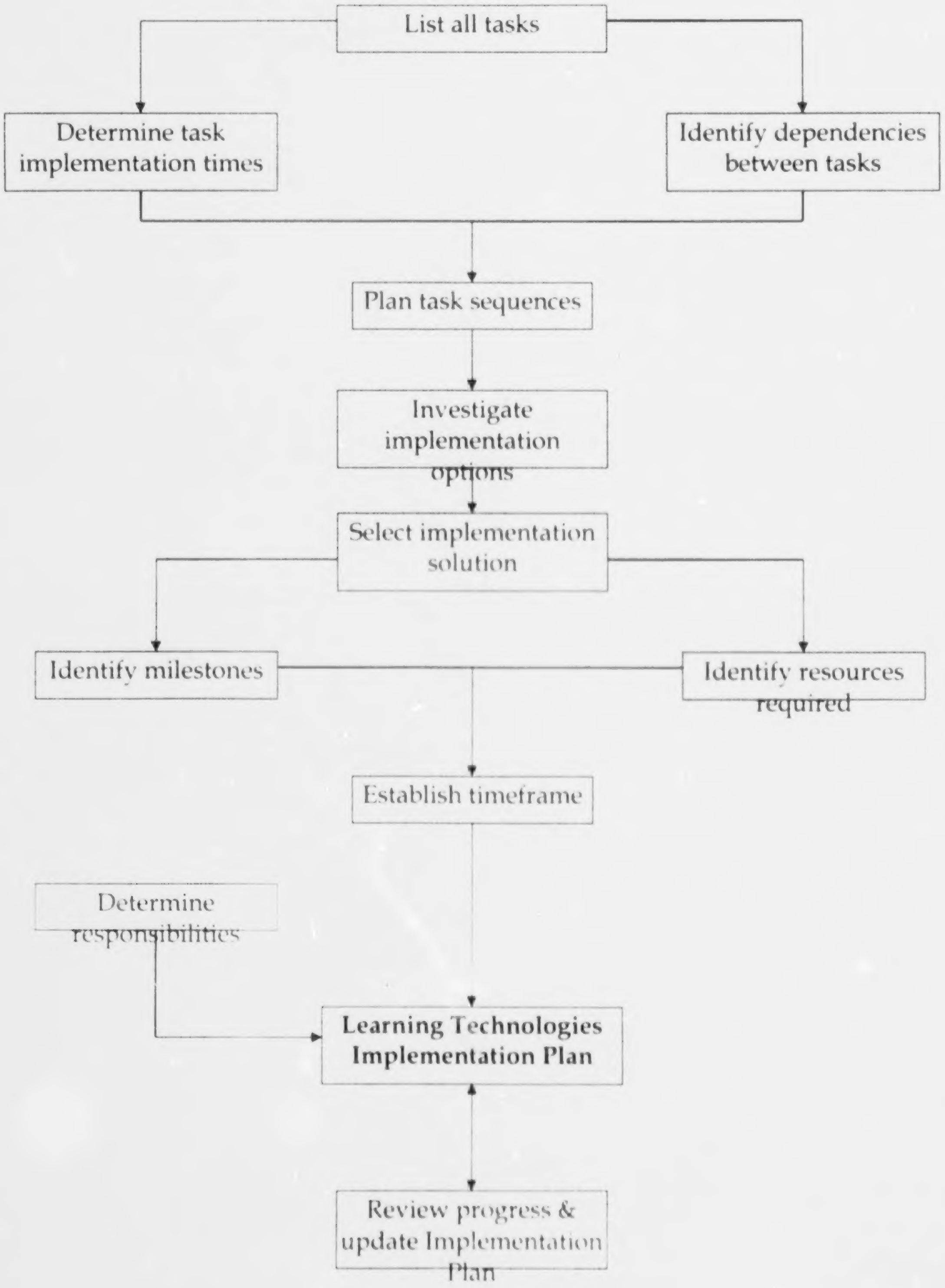
List all tasks
Determine task implementation times
Identify dependencies between tasks
Plan task sequences
Investigate implementation options
Select implementation solution
Identify milestones
Identify resources required
Establish timeframe
Determine responsibilities
Learning Technologies Implementation Plan
Review progress & update Implementation Plan

NOTE:- Source of this document
unknown

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Mapping the School's Present Strengths

Categorise your technology audit responses into the four stage columns below to create a visual impression of current strengths in your school.

Stage One	Stage Two	Stage Three	Stage Four

Financial Planning

A. List under each budget line which strategies / infrastructures have been identified as necessary to achieve the school's goals.
B. How much will this cost? (annually / ongoing)
C. Where are the funds going to come from? e.g. P & C, canteen, global, other.

One off Developmental Budget	Maintenance Budget	Upgrade Budget - Hardware / Software
Projected Amount $	Projected Amount $	Projected Amount $

Sources of Scope and Sequence Sites

1. **Lindfield PS - Learning Technologies Scope and Sequence**. (pg 22-24)
http://www.lindfield.nsw.edu.au/lt.html

2, **FutureKids** (pg 25)
http://www.futurekids.com

3. **Cupertino Union School District Technology Scope And Sequence** (pg 26 -32)
A Technology Scope and Sequence has been developed which provides a framework to help teachers weave the district-adopted curriculum, student-centered learning practices, and technology into rich learning experiences for children.
This Scope and Sequence is intended to assist teachers to integrate technology into the curriculum. It is designed to be used as a road map to help students progress along a continuum of technology skills.
http://www.cupertino.k12.ca.us/Do.www/Scopenseq.html

4. **HotSource**
Do you want to contact another school? Well this is the place to find one or as many as you want. You can look through lists of schools in the different states within Australia or you can locate schools from around the world through the databases listed in this section. Add your school to the list of you aren't already on the list.
http://www.hotsource.com.au/schools.asp

Adventure Games and the Problem Solving Process

John Dance-Wilson Technology Adviser, DET

Abstract: As teachers, we sometimes miss the mark when exposing students to problem solving environments. The expectation that all students can cooperate and achieve a successful conclusion when engaged in a "open thinking environment" is usually overstated. Higher order thinking skills require a solid base of previous experience and an exposure to a variety of problem solving strategies.

Adventure games require a degree of patience, perceptive insights and the ability to take risks. These qualities are an expectation that teachers have of today's students.

In this session you will fully engage your finely honed problem solving skills to navigate through a number of adventure worlds and keep an accurate record of successes and failures. The ability to visually plot where you are at any time, in the imaginary worlds, is an important characteristic in gain a degree of success.

You will need to determine the options available to you and a method of recording your progress.

Let the Adventure begin

It's good to have an end to journey towards,
But it is the journey that matters, in the end
Ursula Le Guin

Imagination is more important than knowledge
Albert Einstein

Life is either a daring adventure or nothing
Helen Keller

I have learned more from my mistakes than my successes
Humphry Davy

Tell me, I forget
Show me, I remember
Involve me, I understand
Ancient Proverb

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A Suggested Strategies/Ideas

Problem solving guide for students

Understand the problem — (SEE)

- Carefully read the problem.
- Decide what you are trying to find.
- Identify the important data.

Devise a plan — (PLAN)

- Gather together all available information.
- Consider some possible actions:
  - look for a pattern;
  - draw a sketch;
  - make an organised list;
  - simplify the problem;
  - guess and check;
  - make a table;
  - write a number sentence;
  - act out the problem;
  - identify a sub-task; and
  - check the validity of given information.

Carry out the plan — (DO)

- Implement a particular plan of attack.
- Revise and modify the plan as needed.
- Create a new plan if necessary.

Check the answer — (CHECK)

- Ensure you have used all of the important information.
- Decide whether or not the answer makes sense.
- Check that all of the given conditions of the problem are met by the answer.
- Put your answer in a complete sentence.

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STEPS OF PROBLEM SOLVING

The **four basic steps** to problem solving are

1. **Identifying the problem**
   Preliminary skirmishing, problem identification, initial exploration, new directions, initial generalisations, gestation and new ideas.

2. **Investigating the solution**
   Data tabulated, patterns sought, organization refined, making conjecture.

3. **Trailing the solution**
   Checking for consistency, supporting conjecture, generalising,deductive justification.

4. **Reflection**
   Reorganization, simplification, pulling loose ends together, summary, critical appraisal and presentation

BECOMING A BETTER PROBLEM SOLVER

Look for a pattern

Construct a table

Account for all possibilities

Act it out

Make a model

Guess and check

Work backwards

Make a drawing, diagram, or graph

Select appropriate notation

Restate the problem

Identify wanted, given, and needed information

Write an open sentence

Identify a subgoal

Solve a simpler problem

Change your point of view

Check for hidden assumptions

Brainstorming

Rules

Think of as many ideas as possible
All students must share ideas
Students can build on the ideas of others
Recorder accepts all ideas without comment
Ideas are not criticised
Ideas are briefly stated

How to use Adventure Games in the Classroom

What is an adventure game?
How do you play an adventure game?
How can an adventure game foster skill development?
How do I use adventure games in my classroom?
Which adventure games do I use?

1. What is an adventure game?

When you play an adventure game you become the hero or heroine of the adventure. You have a quest, dependant on the context of the game and need your intelligence to succeed. You will meet monsters or enemies whom you have to outwit. You will come across hazards and obstacles. There will be objects (a lamp, a rope, etc) which will help you overcome these obstacles or problems but they do not always have the expected use.

You travel around the imaginary world by telling the computer which direction to move in (North, South, In, Up etc)

The computer responds by describing where you are and any objects or other characters that are there. You tell the computer what action to take (kill the goblin, question the suspect, climb the ladder and so on.) Each game understands slightly different instructions, so if one command doesn=t work then try another. You only lose the game if you get trapped with no way out or an enemy kills you.

There are three main types of adventure game:-

Text only; which describes the places, scenes and other characters.
Text/Graphics; which both describes the scene and displays a picture of each
location.Arcade-game style/Multimedia rich component.

2. How Do I Play an Adventure Game?

Moving Around

It is a great help to draw a map of the world of the adventure game. This can become fairly complex. so don't draw each location too small. Add instructions for beating the enemy or solving the problems.

Commands

Movement is usually by compass directions. Most usually lust North South East West, but the more complex ones accept Southeast and so on. To move type in GO SOUTH or just S. More sophisticated games accept GO OUT, GO TO LIBRARY DOWN WELL etc. Try different combinations until you find out what works.

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Objects

Most objects found in one part of the game are useful or use-able in another part of the game. To carry them with you, collect them with commands such as GET, PICK UP, TAKE. STEAL. You can usually get a list of the things that you are carrying with the command INVENTORY. The objects are put to use with a verb, SWING AXE, TAKE BOOK, CLIMB ROPE etc Sometimes objects have more than one use and often unexpected or unusual uses. There may be a limit to the number of things you can carry, so if you need to pick up more, only discard those things that have fulfilled one use.

Mazes

Most games have some sort of maze. It could take the form of "twisty little passages all alike" or "snowstorm all directions look the same." To find your way out, leave an object at each location and map out the maze by moving around until you either return to an object or the way out. Then re-collect the objects and head for OUT.

3. How Can An Adventure Game Foster Skill Development?

The skills developed by the adventure game are largely dependant upon the specific use by the class teacher. They all assist in developing the skills of forming and testing hypotheses. Further they develop skills in the area of problem solving, logical and sequential thought. Dependent upon the use it also fosters co-operation between groups or individuals and if used properly the skills of record keeping.

For classes such as ESL or lower ability English classes they help in developing vocabulary and simple reading skills. With the more sophisticated games simple grammar or sentence structure can also be practiced. Adventure games can motivate children to read, and present a different and interactive approach to fiction.

Creative use by the teacher can lead to many off computer activities which can be directly related to the game or they can simply be prompted by the content of the game. for example; mapping; drawing; creative writing; note taking.

4. Why use Adventure Games

Widen children's thinking and experiences
Increase vocabulary
Encourage reading
Develop problem solving skills
Assist in making and testing predictions
Develop collecting, recording, sorting and synthesising information skills
Stimulate discussion and debate
Develop concentration
Foster patience and perseverence
Encourage children to work together cooperatively
Encourage children to listen to and respect other people's ideas
Encourage children to explore alternate solutions
Encourage children to take chances
Encourage children to become independent and take responsibility for their own learning
Create an atmosphere in the classroom which promotes fun and enjoyment

5. How do I use adventure games in my classroom?

Most children take to these games quickly and enthusiastically. As an introduction, the 'Create-your-own- story' or 'twist-a-plot' style books can be useful. These can be presented by group reading/decision making, as individual reading books or as a teacher read story. Some games have a highly structured approach and these are good starting points. Adventure game are not always based on fiction and fantasy, topics of historical or scientific nature can be chosen. These can be used to stimulate the children towards a topic of work or introduce particular concepts.

If you have sufficient resources for each class member to work individually this Is not necessarily the better way to use adventure games. They are ideally used in small groups. fostering discussion both intra and inter group and the job of recording, typing and so on can be rotated. If you have only one computer it can serve as the focus for discussion or it can be used by a small group as a reward, or on a rotational basis with the off-computer activities.

Teacher tips

Many parts of the game can be difficult. and may require lateral (or warped) thinking. Children can often find themselves with a mental "set" which prevents them from solving unusual puzzles. It is worth solving the puzzles yourself and thoroughly testing the game before using it in a class situation. Also be sure to have maps of all the mazes that the children will come across. This helps avoid frustration and boredom but be sparing with solutions or you will find yourself being quizzed relentlessly. Encourage group communication.

Double periods on computers can be tedious even for the most enthusiastic classes, break them up with off keyboard activities such as related puzzle-words/crosswords. creature feature guessing games. mimes of game characters and so on.
Saving the play position is an invaluable help, especially as play advances through the game. Be sure to keep a number of position saving discs to use with the class. Identify individual spots by giving the groups names based on the characters in the game.

Unless the game requires permanent input make sure that all discs are write protected.

Adventure Game overview and tips reproduced from material provided by Miller Educational Technology Centre circa 1995

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Develop Innovated Texts using ClarisWorks

John Dance-Wilson: Technology Adviser, DET

Abstract: The process of identification of the particular components of a piece of text is a valuable learning experience in itself. The skill of creating a database and word-processed document with merged fields can provided additional stimulus for writing and understanding of language contexts.

The ideas for the innovated text could be introduce in the following lesson outline.

LESSON 1- Students need to be familiar with the text to be modified.

LESSON 2 - Re-read big book, identify content and concept of innovation of text.

LESSON 3 - Identify words to be changed. Prepare the database fields.

LESSON 4 - Finalise selection of field names and preparation of the database.

LESSON 5 - Adapting and editing the original story planning for the inclusion of the merged fields. (Read and re-read original text with substituted text)

LESSON 6 - Final preparation for printing and publishing.

The Concept of Innovated Texts

The reinforcement of the components of written language can be a tedious and somewhat laborious task with some students. The idea of a story framework with a number of fields that change is quite familiar to most students and great opportunity exists for clarification and consolidation of basic grammatical terms and contexts.

As children become familiar with the original story the teacher allows students to explore the richness of the text. Identify simple substitutions for a merged field (see Monster For Hire sheet). This stage involves all stages of the writing process preparing a draft, conferencing, editing and preparation of the final version.

At some stage of a Big Book exploration, children will innovate on the known story framework. They will make up new names of characters, places, objects, foods etc This document is used as the modelled experience towards the start of the unit of work.

The new story the children develop is typed on to a word-processor. The printed text is distributed to the students and they circle/highlight the words that can be changed. At the same time children brainstorm the field name for the database.

A number of groups would be operating devising database content. Once the data fields are determined the job of filling in the content is really quite easy. The Monsters for Hire example took a group of Year 6 students about 10 minutes to complete. The interest and enthusiasm generated was phenomenal.

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The Year 6 children will be rewriting quite a few of the Infants Big Books. The text will be enlarged onto A3 paper and illustrated. The completed books will be added the class collection of reading material.

To merge using an integrated package the database and word processor document must be open. Included the instructions for creating a merged document for ClarisWorks 4.0 on the Macintosh. The same ideas can be used for any of the integrated packages available on the market today. Eg Microsoft Works

HINTS and TIPS

Be aware that some words in the database may need to be in UPPER CASE or lower case. If you are using the same data field in numerous spots throughout the story you may need to create duplicate fields.

Word usage also varies depending on specific objects e.g. you get ON a bike but you get IN a car . The major data field would be TRANSPORT but an additional field needs to be created to cater for HOW it is used.

The idea is a simple one but can generate a high quality source of material. The method can be used to create personalised stories. This might also be a reasonable money making venture for schools.

Happy databasing.

Exercise 1

This is an example of a book being developed for a Year 4 class.

- Circle some of the words that could easily be changed to personalise the story for a particular school or area.
- Work out a number of data fields. These fields will be used to create a database to merge into this document.

The Battle of Zormla by Russell Hoban

Everyone got an invitation but no one could read the invitation. "What does it say? " they asked the Empress of Zurm.
"It seems to be written in Zormlan," said the Empress.
"I think your invited to something."
"What?" said everyone.
"The Battle of Zormla," said a voice.
"When?" said everyone.
"Thursday," said the voice.

Everyone said "Where is Zormla?"
Zormla said "Here I am. Is it Thursday?"
Everyone said, "No, it's only Tuesday."
Zormla said, "We must fight."

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Zormla attacked from the air with blazing clementines.
"Stop blazing with the clementines," said the Empress of Zurm.

Zormla attacked from the sea with a laser sponge.
"Stop lasering with the sponge," said the Empress.

Zormla put a bag over its head, no one knew what it was doing.
"Where will Zormla attack next?" they all said.

Zormla attacked at the Earth's core, led by a picked squad of one-eyed teddy bears with marmalade.
"Look out!" said everyone. "Zormla's got marmalade!"

"This is going to be a sticky wicket," said the Empress of Zurm.
"I call upon the Council of Elders to help in the defence of the Earth's core."

Zormla grabbed the Earth's core and ran off with it.
"Feh!" said the Council of Elders.

"Don't eat that Earth's core, it's been all over the floor."
Zormla put the Earth core into the marmalade.

"Look Out!" said everyone. He's going to eat it!"

Activity 2

Write your own personalised story from scratch. Think carefully about the content and the data fields you would use. It doesn't have to be complicated, sometimes the best ideas are the simplest.

Example - Monster for Hire - Merged fields displayed

<<Creature>> for Hire

In a **<<description>> <<place>>** between two towns lived a giant. Because he was often away the giant decided to hire **<<aORan>> <<Creature>>** to guard his castle.

So he put a sign on the wall:

<<CREATURE1>> FOR HIRE !!!

Along came **<<aORan>> <<Creature>>** " I am looking for work, " he said. ' Try me." "Are you fierce ? " asked the giant. " Very ! " the **<<Creature>>** assured him. He screwed up his face and growled his fiercest growl. " Hmmmmph, " grunted the giant, not impressed. " That looked more like a toothache to me, but I suppose you'll have to do."

The next morning the giant showed the **<<Creature>>** the cave by the castle gate. " Now listen carefully. I have a pantry full of **<<Food>>** and **<<Foodl>>.** " said the giant patting his stomach. " When I get back I'll be starving, so let no one in while I'm away. If a single morsel of food goes missing, it will be worse for you.

That afternoon a **<<transport>>** lumbered up the hill and stopped at the castle gate. Out came the **<<Creature>>** baring his teeth. "**<<Sound>>**!! No one goes in! " he bellowed. "Well, that's too bad, " said the man <<nORon>> the **<<transport>>** " I was told the giant's **<<Object>>** was out of order. I came to fix it. " " Oh ! " said the **<<Creature>>,** scratching his head. " In that case you'd better go in. " A little while later the man came out of the castle, climbed on his **<<transport>>** and **<<droveORrode>>** away.

Example - completed - Text merged into the story framework

ALIEN **for Hire**

In a ***rocky valley*** between two towns lived a giant. Because he was often away the giant decided to hire ***an alien*** to guard his castle.

So he put a sign on the wall:

ALIEN FOR HIRE!!!

Along came ***an alien***. "I am looking for work," he said. "Try me." "Are you fierce?" asked the giant. "Very!" the ***alien*** assured him. He screwed up his face and growled his fiercest growl. "Hmmmmph," grunted the giant, not impressed. "That looked more like a toothache to me, but I suppose you'll have to do."

The next morning the giant showed the ***alien*** the cave by the castle gate. "Now listen carefully. I have a pantry full of ***bananas*** and ***apples***." said the giant patting his stomach. "When I get back I'll be starving, so let no one in while I'm away. If a single morsel of food goes missing, it will be worse for you."

That afternoon a ***bicycle*** lumbered up the hill and stopped at the castle gate. Out came the ***alien*** baring his teeth. "***Zeeeeeee!Booooooooo!!*** No one goes in!" he bellowed. "Well, that's too bad," said the man on the ***bicycle***" I was told the giant's ***microwave*** was out of order. I came to fix it." "Oh!" said the ***alien***, scratching his head. "In the that case you'd better go in. "A little while later the man came out of the castle, climbed on his ***bicycle*** and ***rode*** away.

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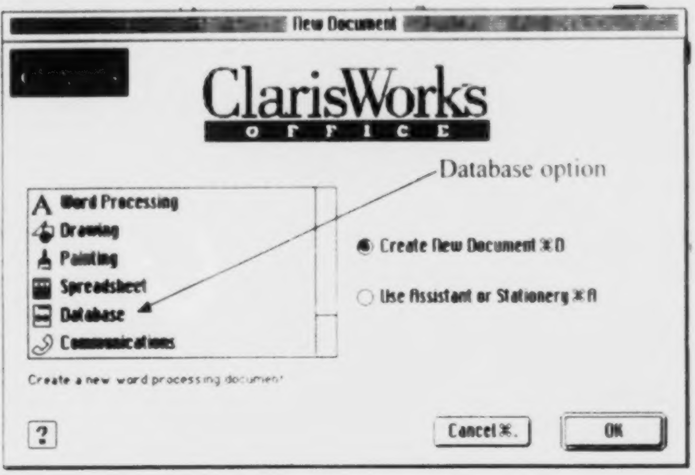
Using ClarisWorks 4.0

1. Open ClarisWorks Office 4.0

2. Select database from the menu available.

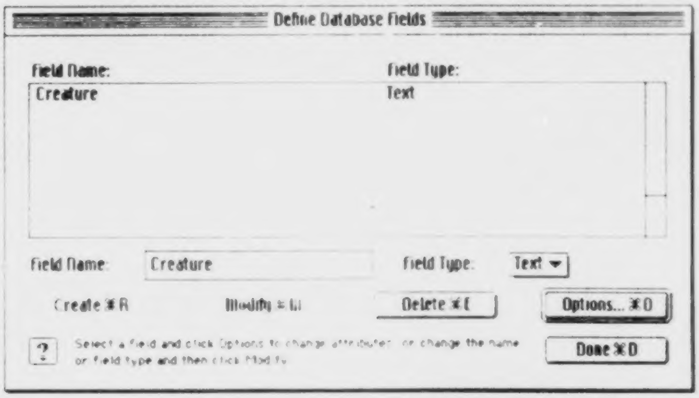

New Document
ClarisWorks
OFFICE
Word Processing
Drawing
Painting
Spreadsheet
Database
Communications
Use Assistant or Stationery ⌘A
?
Cancel ⌘.
OK

Database option

● Create New Document ⌘N

Create a new word processing document

3. The database opens the **Define Database Fields** dialog box automatically. Just type in the field names and click on the **Create** button. The ***Creature*** field has been added in this example.

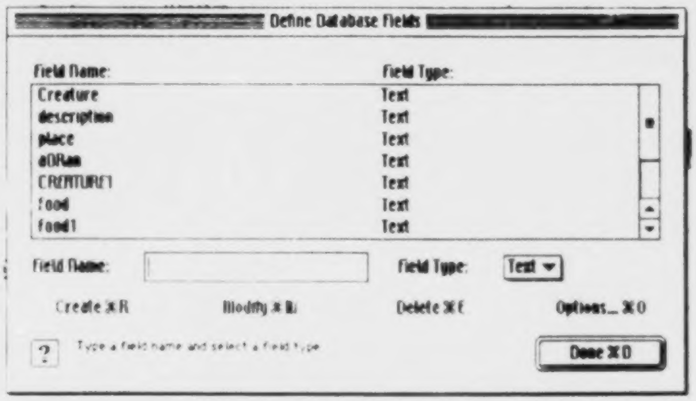

Define Database Fields
Create ⌘R
Modify ⌘M
Delete ⌘E
Options... ⌘O
Done ⌘D
?

Field Name:	Field Type:
Creature	Text

Field Name: Creature

Field Type: Text

Select a field and click Options to change attributes, or change the name or field type and then click Modify.


Define Database Fields
Create ⌘R
Modify ⌘M
Delete ⌘E
Options... ⌘O
Done ⌘D
?

Field Name:	Field Type:
Creature	Text
description	Text
place	Text
a0Ran	Text
CREATURE1	Text
food	Text
food1	Text

Field Name:

Field Type: Text

Type a field name and select a field type.

4. Once you enter all the fields click on the **Done** button.

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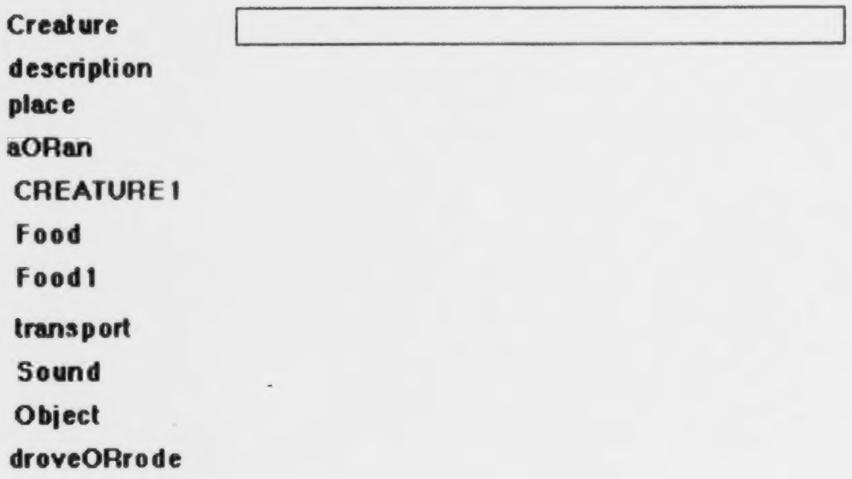


Creature

description

place

aORan

CREATURE1

Food

Food1

transport

Sound

Object

droveORrode

5. An empty database will appear ready for someone to enter the information.

6. Enter as many examples as students have brainstormed. In general terms, you could have around 10 records.

7. Save the completed database.

NOTE:- To create a new record just select **New Record** from the **Edit** menu.

Word Processing and Mail Merge

1. Open the story framework created in the early stages of the innovated text process.

e.g *ALIEN* for Hire

In a ***rocky valley*** between two towns lived a giant. Because he was often away the giant decided to hire ***an alien*** to guard his castle.

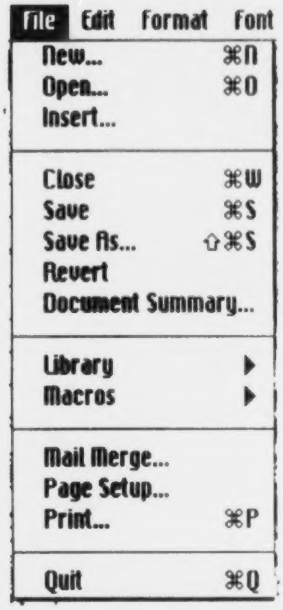
So he put a sign on the wall:

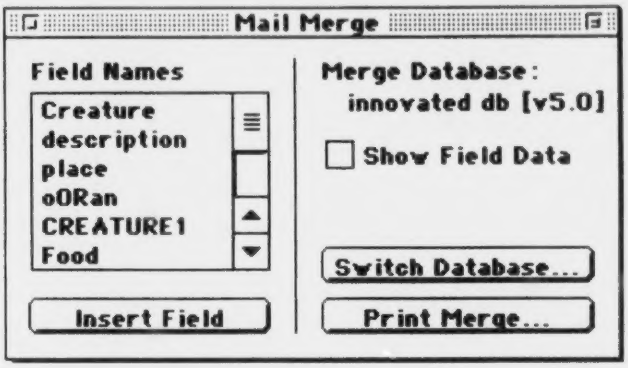
ALIEN FOR HIRE!!!

Along came ***an alien***. "I am looking for work," he said. "Try me." "Are you fierce?" asked the giant. "Very!" the ***alien*** assured him. He screwed up his face and growled his fiercest growl. "Hmmmmph," grunted the giant, not impressed. "That looked more like a toothache to me, but I suppose you'll have to do."

2. Highlight the word where the merged field will appear eg ***ALIEN***

3. Select the **File** menu and highlight **Mail Merge** (it's near the bottom). Locate the database you have created and a **Mail Merge** dialog box will appear. Just select the field you require and select the **Insert Field** button.

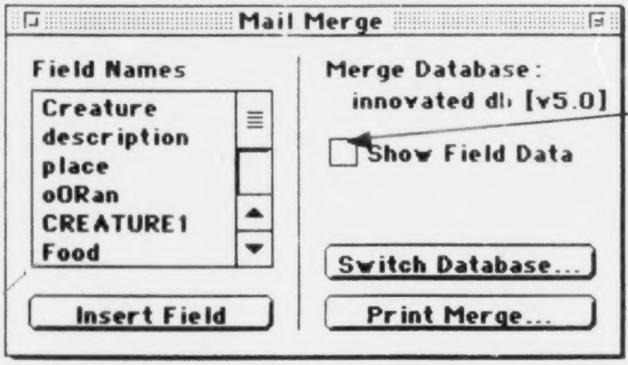

File
Edit
Format
Font
New... ⌘N
Open... ⌘O
Insert...
Close ⌘W
Save ⌘S
Save As... ⇧⌘S
Revert
Document Summary...
Library ▶
Macros ▶
Mail Merge...
Page Setup...
Print... ⌘P
Quit ⌘Q


Mail Merge
Field Names
Creature
description
place
oORan
CREATURE1
Food
Insert Field
Merge Database:
innovated db [v5.0]
☐ Show Field Data
Switch Database...
Print Merge...

4. A field marker eg # will appear in the appropriate spot.

5. You just repeat the process inserting the correct field in the appropriate place in the story framework.

6. You can use the **Show Field Data** button to see if you have correctly placed the field in the story.


Mail Merge
Field Names
Creature
description
place
oORan
CREATURE1
Food
Insert Field
Merge Database:
innovated db [v5.0]
☐ Show Field Data
Switch Database...
Print Merge...

Click on the checkbox

7. Once all the fields are in place select the **Print Merge...** option and the stories will print. NOTE: - If you have 10 records you will get 10 copies of the innovated story - one copy for each record in the database.

Happy Mail Merging

BEST COPY AVAILABLE

Fast and Free: Creating a Web Class with *Nicenet*

Jenny Evans is a German teacher at the Open High School.

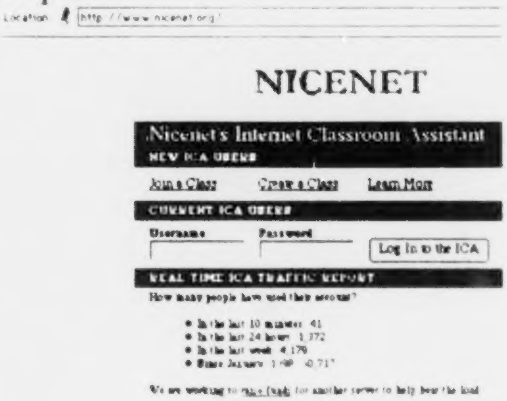
Abstract: The Open High School is a government distance education school providing courses in languages other than English to students in NSW secondary schools. The school is currently exploring the potential of web based technologies to enhance the distance education experience of both students and teachers.

As the time and cost involved in producing materials for multimedia delivery is prohibitive, teachers at the Open High School are trialing the use of the Internet Classroom Assistant *Nicenet* to supplement conventional course delivery. *Nicenet* is an Internet communication tool, provided by professionals in the USA as a voluntary service to the education community. Although it does not have as many features as some commercially available Internet classroom software, *Nicenet* is easy to access and has proved very useful.

. *Nicenet* allows for web based conferencing, personal messaging, class scheduling, document and link sharing. Teachers can create discussion topics to which the whole class contributes in a dynamic, informal way. Integrated email facilitates communication between individuals, and with the class as a whole. Students can publish their work online for feedback from peers, or submit assignments securely to their teacher. Pertinent links can be added by teachers and students, though preferences enable this facility to be turned on and off at the teacher's discretion.

It takes literally two minutes to form a class. You simply go to the *Nicenet* site (www.nicenet.org), click on 'Create a Class' and type in your name and password. You are then issued with a class key, and the class is up and running. To join a class, students have to type in their class key. To log into the class they must remember their password. Even those students with a limited knowledge of computers have managed without difficulty.

Step 1:

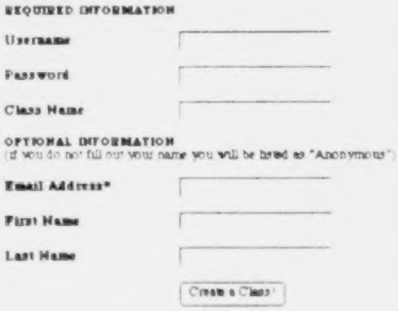

Location
http://www.nicenet.org/
NICENET
Nicenet's Internet Classroom Assistant
NEW ICA USERS
Join a Class
Create a Class
Learn More
CURRENT ICA USERS
Username
Password
Log In to the ICA
REAL TIME ICA TRAFFIC REPORT

How many people have used their account?

- In the last 10 minutes: 41
- In the last 24 hours: 1,372
- In the last week: 4,170
- Since January 1 '99: [illegible]

We are working to raise funds for another server to help bear the load

Step 2:


REQUIRED INFORMATION
Username
Password
Class Name
OPTIONAL INFORMATION

(If you do not fill out your name you will be listed as "Anonymous")

Email Address*
First Name
Last Name
Create a Class!

The virtual classroom is clearly organised and needs little expertise to navigate. The various facilities are easily accessed and the load time is kept reasonable by the low graphics environment.

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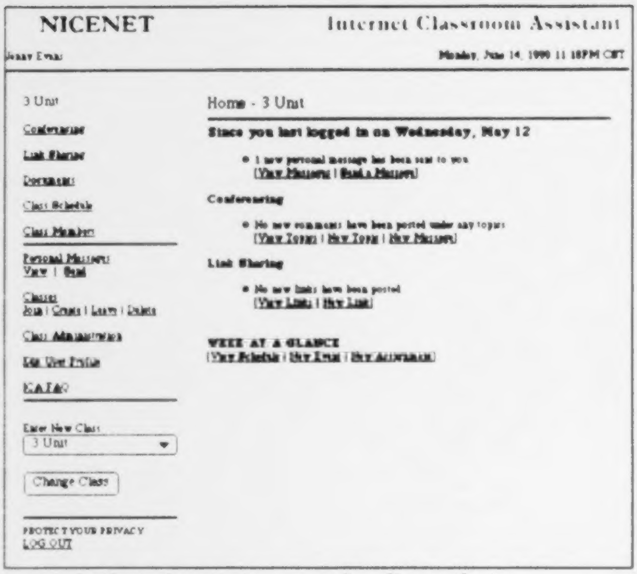

NICENET

Internet Classroom Assistant

3 Unit

Home - 3 Unit

Since you last logged in on Wednesday, May 12

- 1 new personal message has been sent to you
  [View Messages | Send a Message]

Conferencing

- No new comments have been posted under any topics
  [View Topics | New Topic | New Message]

Link Sharing

- No new links have been posted
  [View Links | New Link]

WEEK AT A GLANCE
[View Schedule | New Event | New Assignment]

Students have responded very positively to the availability of the online classroom. They have enjoyed the spontaneity of email, which has assisted in breaking the sense of isolation often experienced. Many students find it more manageable to email work to their teacher in small units, and benefit from the immediate feedback. They are able to take more responsibility for their learning in determining how they will submit their work. As many students have access to the Internet through home computers, they also have greater flexibility as to when and where they work. Students have been independent in their use of *Nicenet* and have found inter-student communication to be a great source of encouragement.
They use email to share knowledge and experience, to air their frustrations and enliven their work with humour.

The online class has proved a positive strategy in terms of gender equity. While girls are encouraged to extend their computer skills, boys, who are under-represented in language learning via distance education, have become more motivated. They are able to build on prior knowledge, incorporating their interest and expertise in computer technology into their language study.

Nicenet has many practical advantages. These include :

- no cost
- no advertising,
- reasonable load time
- has its own server
- runs using any web browser on any platform
- requires only an Internet connection.

There are, of course, drawbacks to using *Nicenet* - the most obvious being the amount of time it consumes in addition to conventional teaching duties. The inevitable network problems experienced at both ends, are also a source of frustration. Ensuring student participation has presented some challenges. Students who have to make an extra effort to access the class find it a burden, and some students have poor keyboard skills or simply do not like computers.

Despite the problems associated with introducing new technology, many teachers and students are convinced of the overwhelming advantages of an Internet enhanced learning environment. There are steps that need to be taken to ensure its success. It is vital for teachers to have computers with Internet access at their desks, for the most effective teaching to occur. And for the best results, use of the Internet should be formally integrated into course structures. The notion of multimedia materials presented in a virtual classroom is a highly attractive and not too remote possibility. It is certainly an exciting new direction for both teachers and students at the Open High School.

Professional development through the adoption of multimedia authoring in a state primary school

Lindsay Freeman: Principal, Summer Hill Public School

Overview

" Technology is the most subtle and most effective engineer of enduring social change. Its apparent neutrality is deceptive and often disarming" Robert MacIver

These ideas are based on experiences at two schools, Alfords Point Public School 1996-1997 and at Summer Hill Public School 1998-1999. At both schools there has been a conscious effort to incorporate technology into daily classroom activity in a way that enhances the quality of learning. In short periods of time there has been considerable progress in the schools adopting technology as an integral part of daily programs. Both schools have set out to do this in a way that involves all teachers and classes.

The two schools are very different in character and history. Alfords Point only became an autonomous school in October 1995. Prior to that time it had been an annex of Tharawal Public School. The school at that time had about 350 students and was housed completely in demountable (portable) buildings. This continues to be the case. Due to its short history the school had limited resources and as a consequence any funds available for technology were scarce. The school is however in a moderately affluent newer suburb of Sydney. This has meant an active P&C ready to raise funds for school initiatives. They are also generally responsive to a case for change if clearly outlined and argued logically. The school also had and continues to have a dedicated staff with a core group excited by prospects of new directions.

Summer Hill is a much larger school of approximately 700 students. It is a well established inner city school with a long history. Very strong programs have been in place for many years and the school has a reputation in areas such as literacy and the creative and performing arts. While some staff had some knowledge of technology there was a general reticence to incorporate its use into the classroom and many staff were very concerned about change in this direction. This in part was due to a perception that computers were expensive and required great care. The committee looking at computer use in the school had limited knowledge and were unsure of a whole school direction.

Despite the differences in the two schools a number of factors assisted in producing real change in staff perceptions and directions within a limited time. In this paper I wish to try to identify some of these factors while at the same time noting any difference in approaches in the two schools.

Implications for Change

" Progress might have been all right once, but it has gone on too long now"
Ogden Nash

Schools need to change. It would be ridiculous to think that schools could continue in a technological age without capitalising on the opportunities provided. I am sure that we all have teachers in our schools who still act as if it would all go away ...much like Ogden Nash. Technology facilitates some of the aspects of teaching and learning to which we have often given lip service but which have often still made limited impact on many classrooms. With the right approaches we can see an increase in truly collaborative learning. For this to happen the expectations of change need to be clear. Otherwise the computer simply becomes a replacement for the blackboard or the photocopier.

At both Alfords Point and Summer Hill this process meant the rationalisation of software to a few programs that could be used across KLAs and which could be used to develop multi-media presentations. Principal programs were KidsPix and Hyperstudio as well as Clarisworks. Effectively staff needed to only become familiar with one or two pieces of software. In itself this facilitated a readiness for staff to accept change. Today staff would be ready to explore the use of Hypertext options but Hyperstudio still provides a resource that is simple for both students and teachers.

Pressure on Teachers

The principal's role is to encourage and guide teachers through change. At times he may have to deal with the ambivalence & uncertainty of some staff and community opinions which are not educationally based.

An overall picture, a practical, well thought out approach presented with understanding and strong guidance will help alleviate the pressures and concerns of both staff and community.

With staff it is probably best to outline the change clearly. At both Alfords Point and Summer Hill it was obvious that once computers were a feature of every classroom that parents would be increasingly interested and at times anxious about their child's involvement. There is no doubt that the teacher who fails to switch on the computer or to use it in a meaningful way would become increasingly isolated and vulnerable. I think that all teachers should be made aware of this.

Part of painting the picture is however to show an easy path to change. Good teachers will quickly recognise the exciting possibilities no matter what their level of technological expertise. Others may need to be supported through the process. It is imperative that teacher understand that they do not need high levels of expertise and that a few skills are ample to make a start.

Training

The most important facilitator of change is training & development.

Traditionally this is seen by many as attending courses and implementing what is learnt into the classroom. The real picture is of course much more complex.

Training for students needs to be part of the equation. For many teachers who see themselves as the purveyors of knowledge, realising that the students will become the real 'experts' could be a major struggle. At Alfords Point students were used as tutors for teachers learning software. At Summer Hill training in specific skills was provided for students who would then share these skills with others. The most powerful type of training is however when the classroom teacher and students learn skills in a collaborative way.

The use and availability of other teachers as mentors needs also to be a consideration. With this must come an emphasis on collaborative learning approaches as well as on the technology. This is the real challenge if technology is not to be an electronic version of traditional approaches. Much of the software we see simply reinforces traditional teaching styles.

At Alfords Point a team teaching approach was used where teachers who had implemented collaborative learning with Hyperstudio worked with other classes. Considerable time was also devoted to examining teaching practices on School Development Days and during staff meetings.

At Summer Hill a similar approach to T&D has been put in place with perhaps a greater emphasis on opportunities for sharing. This is still limited and is an area that has a lot more potential. There has been an ongoing program of afternoon sessions in technology that have up until this time been optional. At this stage certain aspects, notably to do with the completion of school reports, have become an expectation.

In both schools a group has been responsible for T&D specifically related to technology and its implications for teaching and learning. At Alfords Point this was established from a group of motivated staff. The situation at Summer Hill was very different where there was an existing computer group had been formed. Members of this group were initially unsure of their role but have become the real facililtaors of change.

In both schools computers and other equipment are readily available to staff during holiday breaks and for other periods when staff development is needed. This option is widely used.

The purchase of laptops is worth considering. Ease and availability to all equipment further assists staff in their learning process. Budget restrictions have limited the number of laptops at Summer Hill but they are in constant use.

It would appear that the best approach to T&D is a combination of the following:

- Mentoring
- student training
- ongoing traditional staff development
- sharing of ideas and approaches
- opportunities for individual growth through the loan of equipment

Reliability

Ongoing use of computers requires a decision to keep all systems operational. I still have a reluctance to spend large amounts on infrastructure such as networks until resources are available to keep support going. At Alfords Point a great deal was achieved with simple networking solutions. At Summer Hill the physical layout of the school makes it a very daunting option. Instead the emphasis has been on making each room self sufficient and providing a small network in the library.

In 1998 with the support of the Primary Principals' Council I was able to visit a number of 'Navigator Schools' in Victoria. One could not help but be impressed by the technical infrastructure in the schools but the budgets needed to keep networks fully functional were well outside the range of most schools, especially if computers are to be out in classrooms. For me having fully self sufficient classrooms is the first step.

There have been some notable changes to layout in many rooms as computers become increasingly incorporated into the learning day. The need to provide power to where teachers want it located can be a challenge especially in an older school like Summer Hill. A great deal of expense had been devoted to providing power outlets in storerooms and withdrawal areas. With teachers now seeing the computer as a focus for cooperative rather than individual tasks, these have needed to be moved into classrooms.

Support

Ongoing support for staff is crucial. Currently a part of the school budget is devoted to ensuring that staff receive technical assistance. I believe that this is imperative if staff are to continue to develop. Frustration is the greatest enemy of integrating technology into the classroom. At the same time should have alternatives if the technology fails. It is not the responsibility of other teachers to come to their aid. A system whereby teachers list problems so they can be dealt with as soon as practical needs to be in place. This could be a sheet near the sign on book.

At Summer Hill we have bought in some technical support and if there is sufficient funds this could be considered. At the same time staff need to become increasingly self sufficient. While mutual assistance increases, it is imperative that the good graces of a few staff do not become the basis for technical assistance.

The Agenda

If you are going to bring the staff with you the agenda needs to be clear and simple. This means limiting the software and ensuring that staff are aware of how support functions. Everyone needs to understand the basic expectations of change and their role in it.

Part of effective change is keeping staff aware of all aspects of the process. At both schools I have used a daily news bulletin . Being the leader of a team means sharing of frustrations as well as successes. I feel that there is a greater chance of success if staff are confident that they know the full picture and that there are no hidden agendas.

This applies to staff as well. More capable staff might tend to regard themselves as the custodians of expertise. They too need to be reminded that this is a whole school approach. They too need to share and inform. These key staff are of course very powerful players in any change. Their identification is important. As mentioned before however not all the key players at Summer Hill started out with any expertise. They did however have the respect of staff for their dedication and enthusiasm for teaching. Their involvement has been crucial to change.

The support for staff who see it all as too difficult is of course a major challenge. As long as possible there needs to be provision to assist these teachers with training and mentoring. For those who will not budge the time may come to leave them behind but it is always important to remember that these people are the real measurement of school wide change.

Finance

Much of the discussion about technology concerns cost. There can be no doubt that this is a major consideration but it should always be secondary to learning. There is no guarantee that a school with a computer budget of $100,000 will have better educational programs than one with a budget of $10,000. In fact some of the student work from very sophisticated machinery can be very ordinary. On the other hand some outstanding work can come from relatively cheap hardware and free software.

At Alfords Point there was a conscious effort to show that a great deal could be achieved with a limited budget. Much of what was put in place was achieved prior to the computer rollout. The aim was to provide three machines per classroom and to focus on collaborative learning through the use of KIDSPIX and Hyperstudio. Much of the intention was realised through the acquisition of cheap hardware. At times this led to some frustrating dead ends but quickly a decision was made on the level of hardware needed to achieve the required result. Computers were purchased second hand at $700 each. Other hardware, software and support came from sponsorship, loans and voluntary help.

Perhaps part of the lesson comes from history. In the Middle Ages the written word was scarce. Books were beautiful and expensive to produce. They were locked away in rooms specifically for the purpose. Literacy levels were low. Several thousand years before the Sumerians invented a style of writing. They used clay tablets. Clay was cheap and plentiful. The scribe was a feature of every market place. Not everyone could read but the written word was readily available to everyone. The best options are not always the most expensive.

At Summer Hill the computer rollout saw a different approach. Due to the size of the school much of the budget is in terms of support and training. Again not great amounts have been put into the technology per se. Site licenses have been purchased for Kidspix and Hyperstudio which are the major programs in use. The emphasis has been on learning rather than the purchase of technology.

The challenge will continue to be on how student work can be saved. This is not an issue when students are engaged in word processing but it is when they are producing sophisticated multi-media presentations.

Why Interactive Media ?

Back in the 70's I was teaching at a little one teacher school in the Monaro near the Snowy Mountains. At that time it was decided that there was not enough technology in schools. Our school received a listening post on a portable trolley. so large that it could hardly get through the door. We also received a video player. It used black and white reel to reel tapes. We could record educational programs from educational television. One day the kids sat down to watch a program on stunt men. In those days they would build a crash pad of cardboard boxes before jumping off buildings. The next day was the athletics carnival at Bombala Showground. At the end of the day I was packing up the high jump gear when I looked towards the grandstand. It was then that I saw Denis launch himself off the grandstand into space. By the time I reached the back of the grandstand Denis was extracting himself from the boxes. Denis had used the technology to extend his own learning.

The first lesson for us all to learn is that increasingly students will know more about computers and other technology than we do. In the light of this it becomes meaningless for us to regard computing as a heirachy of skills to be taught. Those teachers changing most successfully are not threatened by this and increasingly make use of students or learn new skills with them. The power from software and approaches such as Hyperstudio is that it also capitalises on the expertise and receptivity of students.

There is certainly a continuum in computer software and at times there will be a place for each type. These might be described as;

- Clip on computing (Games etc)
- Curriculum components (CarmenSantiego)
- Collaborative computing. (Hyperstudio, Web Design).

While both schools the emphasis has been on the collaborative area there has been a place for other software notably 'Wiggleworks' in the lower school. Interestingly enough Summer Hill has a varied stock of previously purchased software which gets very little, if any, use. The power of the interactive, collaborative section of the continuum becomes too obvious.

Controls

One decision made at both schools was not to have controls, such as 'At Ease', on the machines. This decision has been proved to be the right one as children see themselves actively contributing to the use of the computers. At Alfords Point there was one incident when a student tampered with the work of other students. The reaction from the rest of the class was one of abhorrence and the student's virtual ostracism. At Summer Hill a number of controls needed to be removed; at times with difficulty. There has been no incident of student interference with computers of which I am aware.

Staff perceive this as being due to the students having ownership of the equipment and the work being produced. The feeling of ownership appears to overcome the likelihood of vandalism or interference.

For access to the Internet we do use Macquarie Net. This usually provides ample information for our students and is a great first stop on the Internet.

Conclusion

Technology has great power to change the way in which schools function. With a clearly articulated focus from leadership supported by training and sharing there is the prospect of real educational growth. There is no doubt that this will be an at times difficult and frustrating process. The rewards however will more than compensate as we see the realisation of exciting, vibrant learning organisations.

Planning and designing an award-winning school website

Daphene Gonzalvez: Sydney Secondary Distance Education Centre

Abstract: "In the year 1500, fifty years after the printing press was invented, we did not have old Europe plus the printing press. We had a different Europe."
Neil Postman, *Technopoly: The surrender of culture to Technology. (1992)*

The invention of computers has brought about change greater than that of the printing press mentioned in the quotation above. Computers have revolutionised the world of publishing. The numbers of books published has increased dramatically and the range of quality has broadened. With the introduction of the internet about 400 million websites have appeared on the World Wide Web. Each site is a "book" of a special kind. Ease of creation and publication mean that anyone with the necessary technological skills can create a webpage and publish on the net. The discipline of the process of publishing printed books has vanished with the click of a mouse.

But this new ease of publishing has led to slackness in proofing and editing. In addition, the notion that the website is merely a "book" to be scrolled down the screen, is a sign of ignorance of this new medium. Establishing a good website calls for both old-fashioned discipline as well as new-age skills.

Those who design quality websites engage in the process of planning, designing, proofing and editing. They take into account audience and purpose, site design and navigation. The ten-step process outlined below is inspired by Greg Stone of the University of Massachusetts, Dartmouth, USA, whose Cybered course on Advanced Webcraft is a must for all serious website designers.

In outlining the steps I am assuming that the school community is keen to have a website. Because there is a considerable amount of work involved in setting up and maintaining a school website, a commitment from staff and students is essential.

Planning

Step 1: Identify the purpose of your website:

Think about what your school community aims to do with the website. Are you aiming to inform the web public about your school, advertise the subjects you offer, teach your students online, provide a forum for communication?

Step 2: Identify your audience:

Who is the audience you will target for your school website? You would probably include students, staff, parents, potential students, visitors. Is there any other group who might be interested in knowing about your school?

Step 3: Recognise the needs and wants of your audience:

What will the audience need and want on your school website? You could make a calculated guess and supplement your list with a survey of the groups in the school community to find out what they would like to see on their school website.

Step 4: Make a comprehensive list of the content:

What items will feature in your school website? The list you have made in Step 3 is a starting point. You might want to add other items such as history of school, calendar of events etc. to satisfy the purpose of your website (Step 1).

Organising

Step 5: Linking audience with content:
Which group needs or wants what? Link the items in your list prepared in Step 4 with each group in the audience.

Step 5: Make a diagram of the structure:
How will you structure your school website? Start with the homepage. Which items will be the first links in the hierarchy? Which items will fall in the second and third levels? Find a place in the structure for all the items in your content list.

Step 6: Make decisions on the design of webpages
What must go on every page of your website? Think about the home page - will it feature a graphic? If so, what graphic will give the right message about your school. The school community should feel proud of the opening page and visitors must be enticed to enter.

What will be the design of the first level, second level pages? Keeping in mind that the pages must have unity, is there need for slight differences?

Step 7: Plan the navigation:
Ease of navigation is essential in the electronic medium. A disoriented surfer is a loss to you. What navigational devices will you use? Where will you place the navigational devices on each page?
Will there be a need for additional navigational devices within, say, second or third level? Where will you place these on the page?

Creating

Step 8: Identify skills needed in a website team:
It is extremely difficult for one person to create the whole website. Think of the supporting skills you need to create the website. Make a list of all the jobs that need to be done. For example, collecting content, creating graphics, writing HTML and Javascript, including sound, including video etc. Is there a need for training? Where can you get this training?

Step 9: Allocate responsibilities:
Who will be responsible for what on the school website? Match skills to people on your staff. Who will
design the website, collect content, create the pages, build graphics etc. Most importantly decide on who will be responsible for maintaining the website.

Step 10: Identify technology needs:
Apart from the obvious need for computers for members of the team, find out how much disk space will accommodate all your content and what software will help you. And when your work is done find out who will host your school website. Good sites for the serious website designer:

Bibliography

Yale Style Manual: http://info.med.yale.edu/caim/manual/

Cybered courses at University of Massachusetts: http://www3.umassd.edu/

Multimedia authoring for school students - Inventing new possibilities for demonstrating student learning

Phil Nanlohy; Uni. of Western Sydney, Macarthur; Faculty of Education

Abstract: The spreading use of multimedia authoring software in schools classrooms has provided students with a new and more complex medium of expression. This paper uses a teacher made hypermedia product as an example to discuss the theoretical and practical implications of students building immersive learning environments with this class of software.

Introduction

Multimedia authoring by school students is most often pitched at the level of slide shows and electronic portfolios. Larger scale collaborative projects have the potential to more deeply engage students and to broaden the learning offered by the experience. This discussion of the use of multimedia authoring is set in the context of such a project. The paper has a companion hypermedia stack called The Lost Lake[1]. This set of HyperStudio files can be found on the CD that accompanies these conference proceedings or can be sourced from the author. Lost Lake is intended to be an extended template to be modified by those students who use it and to be a model for a broader conception of multimedia authoring by school students.

Visual nature of multimedia texts

For students to show what they have learnt they must present what they know to their teachers. These demonstrations of knowledge, skills and understandings are usually in a written form. Essays, maths calculations, reports, narrative stories or class notes are some of the many genres of written texts that teachers require their student to use to demonstrate their learning. Sometimes images accompany the text, as in a project or poster presentation, but text is most often used as the central communication method.

These educational assessment practices are in contrast to a world in which visual forms of communication take up more of our students attention. Even disregarding cinema and television viewing it is true to say that students are interacting with more media that is visual in its design. Books for young children combine images with text to tell a story, magazines and newspapers use colour and graphics to convey a message and screen based information sources have become ubiquitous. While text only books still flourish they exist in an expanding universe of communication technologies. Most first world schools have adopted screen-based technologies into their education programs. This paper argues that schools should provide opportunities for students to learn to author visual texts as well as written texts.

In a discussion of the representation of information Gunter Kress (1997) comments on the increasingly visual nature of technologically mediated communication. He suggests that in a screen-based environment even text is defined visually. Authors have available representations of text that can be varied in size, style, colour and font. Combinations of these attributes are used by authors to emphasise and enhance the messages they seek to convey to their audience. Pages are not simply filled with typed or hand written text. They are designed visually to convey meaning. The graphic and textural elements on a page are positioned with purposeful intent. The shift from typewriters to word processors to multimedia authoring exemplifies the shift from text only to multimodal methods of communication.

Multimedia that combines text, graphics, sounds and video has become the standard representation in educational software. The convergence of technologies around CD-Rom storage has enabled multi-sensory educational experiences to be available in classrooms. Multimedia authoring software ranges from fully featured programs like Authorware through to simpler tools like Kids Pix and the slide show option in Clarisworks. Special purpose multimedia authoring packages have been developed for school children. Hyperstudio, the program featured in this paper, is one such program. More recent versions of multimedia authoring programs also have hypertext capacities and so are more correctly termed Hypermedia (Jonassen et. al., 1999).

Multimedia and Hypermedia in primary classrooms

A number of studies (Chuckran, 1992 and Mc Killop, 1996, cited in Jonassen et. al., 1999) have shown that the complexity of information representation that hypermedia makes possible has learning advantages for students. "When students explicitly linked content in their designs in order to show the inter-relatedness or complexity of ideas, they were more likely to develop meaningful content structures. If you want students to understand complex ideas you need to allow them to represent the complexity of the real world in their own products." (Jonassen et. al., 1999, p. 102.) As with any educational resource the capacities and limitations hypermedia should be well understood by teachers before introducing it to their students. Hypermedia authoring should be used as part of a learning plan that involves exposition, research, group interaction and public response. It is an ideal class of software to foster "collaborative computing" (Nanlohy, 1997b) within classrooms in which students are encouraged to take responsibility for their own learning.

An investigation of the value and use of interactive multimedia programs for primary classroom use has been a research interest of the author for a number of years (Nanlohy, 1997a, p.176-183). A number of closed multimedia programs (Sim Series, Myst, Destination Mars and others) have been trialed with teachers and students in middle to late primary classes. These programs have also been used with adult students in university and inservice classes. These studies have focused on academic needs in the English and HSIE syllabus areas. However one of the results of the studies was to find that social needs were as important to the students as academic needs and that harmonious social relationships in a co-operative class atmosphere supported better academic outcomes. The open ended nature of simulation and adventure learning software allows teachers to structure off computer experiences that build on the students use of the program to meet a diversity of academic needs.

More recently, an examination of the use of multimedia authoring by students have demonstrated that teacher planning and leadership is needed to assist students to move beyond simplistic uses of the software. At the same time students needed to be able to exercise autonomous design and ownership of the projects on which they were working. In a year long trial of the use of HyperStudio within the HSIE curriculum area in an urban primary school the following developmental stages were observed.

12. Explicit instruction in research skills and the use of concept maps to refine inquiry.
13. Initial instruction in the program's features and free exploration by students.
14. Linear stack organisation and use of buttons to create hypertext linking.
15. Students matching the structure of their concept maps to planned stack structure.
16. Use of colour, clipart and text to create single cards to record research findings.
17. Perceived need to improve interactivity of stacks, search for new features.
18. Use of New Button Actions to extend the range of interactivity.
19. Use of animation to add interest to existing stacks.
20. Critical evaluation of own and other groups stacks in response to teacher prompts.

It should be noted that these stages evolved in response to both planned actions by teachers and initiatives taken by students. The teachers overtly taught research skills, note taking, the use of concept mapping and introduced the HyperStudio program. The students were taught how to match their concept maps to a HyperStudio web construction. In response to students requests for more interactivity they were taught how to record and playback sound, how to use path animation and the NBA plugin features. Upon demonstration of each new feature active discussion and decision making by groups of students was observed as they incorporated the new feature into their design. A number of teacher and students stacks collected as work samples are included with permission on the conference CD.

The outcomes of the trial suggested that combining student group stacks to form a larger project might be a way to extend their cognitive challenge. Initially it was also a way to expand the audience for the student's work by providing a unifying theme and a prolonged experience. Using a teacher created linking stack[2] the work of the students could then be presented and displayed to other students in such public places as the school library or on a foyer kiosk.

A refinement of the idea of linking existing stacks was to provide template stacks that could demonstrate to the students some of the advanced interactivity that they had requested in the later stages of the trial. This could be presented as a content free stack with hyperlinking areas built in[3]. Such a template can be set up to minimise some of the mechanical work of building a stack. This encourages students to concentrate on higher order design tasks such as communication of content and provision of interactivity.

A more detailed template would include content relevant to the area of study being followed but with opportunities for extension and elaboration built in. Such templates could use the work of previous groups of students or could be teacher made. The subject of the rest of this paper is such a template. Drawing on the experience of using the Myst adventure with students and on the available resources the Lost Lake set of stacks was created. The specific content has been included to scaffold the students' studies and the linked landscape in intended to draw the students into the experience and to engage them in the puzzles provided by the stack.

The Lost Lake HyperStudio Stack

The prime academic goal of the Lost Lake package was to create a learning environment that would engage primary aged students in understanding how communities use the resources available to them to meet their needs. In this case "How do people use the lake?" The lessons learnt from previous investigations and a focus on this question shaped the design of the Lost Lake package. In particular the following principles were applied;

11. The users should be active and in control of their learning experiences.
12. The package should be used in a socially constructed context (small group of users in school or at home).
13. The intended learning should be based on a rich information environment with multiple representations of content.
14. Users should have structured opportunities to synthesise the available information into forms that can be published externally.
15. The package should be open to extension and elaboration as student users develop it into their own representation of the knowledge domain being studied.
16. The material should be visually attractive with high colour contrast.

The content of the Lost Lake package is largely visual. While some information is provided as text on the pages of the central stack it is the images of the landscape that provide the richness of content. The package is about the interface between the lake and the land along its shore. It is about the domination of human use over natural use of the local resources. Finally the images are about living in a community in this location.

Land				Lake			
Human Use		Natural Use		Human Use		Natural Use	
Commercial	Recreational	Plants	Animals	Commercial	Recreational	Underwater	Overwater
Shop	Housing	Trees	Galahs	Fishing	Sking	Prawns	Cormorant
What is it like living in a lake side community?							

Structure of Content

The information landscape presented to the students has a number of elements with which they are invited to interact. In order of presentation these elements are;

21. an opening screen that points the user to a book, the main metaphor used in the stack,
22. a book metaphor with a contents page that is the central access point for the learning environment,
23. a linked image landscape that allows users to explore the lake side and the small community of "Lost Lake"

The Opening

This introductory page is intended to engage the users by attracting their attention and arousing their curiosity. It establishes the use of a book metaphor and the availability of a software agent (the dog Larry) who from time to time, will appear to prompt the user to investigate a scene. The metaphor is established when the user is directed by this cartoon avatar to find a book that leads them to the next section of the environment. Animation of the book and Larry the assistant, the voice over, the title text and a scene that leads the eye to the horizon are all intended to set up an atmosphere of mystery and to trigger a motivation to discover just what is the Lost Lake.

The Book

The first page of the book provides a list of sections and summarises what is available within the book for the user. This contents page has links to pages meant to be read and to pages that can be used for writing. It also provides two different ways to link to the linked image landscape. Black (cited in Harper, 1998) describes two classes of metaphor. In the present case the underlying or primary metaphor is that of a book. This is supported with the graphics used to present each card and through the terminology used to label each functional section of the book. The auxiliary or secondary metaphors include the contents page, the different types of information pages, the note taking and clue pages and the image landscape that could be considered picture pages.

The Linked Image Landscape

The inspiration for the linked landscape was the Myst program that creates an environment based on a first person perspective walk through of an artifact rich world. In that package a book metaphor is used to link different worlds or ages. The picture pages of the Lost Lake package bend the book metaphor because of the hypertextural way in which they join one to another. However they remain closely linked to the primary metaphor because of their book like presentation and their navigation links to other book pages. It is this linked landscape of some 50 images that gives the stack its democratic nature. The users' ability to move through varied localities within the precincts of this lakeside community creates opportunities for open-ended investigation and student centered learning.

Classroom Uses of the Lost Lake

While the Lost Lake stack could be used in a number of contexts it was designed with a Primary school classroom in mind. It is intended to be used with a small group of two or three students who share a single computer. The reading level of the texts in the stacks and the sophistication of information technology skills required indicates that Stage 1 and 2 students would best use this resource. NSW Department of Education and Training (DET) syllabus documents are organised around a notion of developmental stages rather than chronological grades. The syllabus outcome statements for Stage 1 are appropriate for most children in Grades 1 and 2 while the outcomes for Stage 2 are appropriate for children in Grades 3 and 4.

Experiences with the Lost Lake package would stimulate work in a number of syllabus areas but would most usefully be applied to meet outcomes from the Human Society and its Environment (HSIE) syllabus and from the factual writing section of the English syllabus. The HSIE syllabus is divided into four broad areas. The Lost Lake package would be most appropriate for the Environmental (EN) outcomes and for the Social Systems and Structures (SS) outcomes. The environmental outcomes are divided into two strands. These are Patterns of Place and Location and Relationship with Places. Because the Lost Lake package is based on a close examination of a small lake side community it offers many experiences that will help students to meet Stages 1 and 2 outcomes from these strands.

As currently structured it is a teacher designed learning resource. It could be used as it stands or as a template by those students who are able to learn to use its authoring package. It would offer a set of resources that might be applied to game playing or narrative construction. Its democratic and non-violent organisation would make it appropriate for younger students of both genders. Also included with the package is a set of image files, saved in a cross platform format that serve as a resource in their own right. Teachers have a long history of creating resources relevant to the needs of their students. Multimedia authoring continues this tradition.

Lost Lake as simulation software

One way to view the Lost Lake package is to categorise it as a simulation of the lakeshore it explores. It falls into that most absorbing classification of software the hypermedia adventure or simulation. In a simplistic way it demonstrates the attributes of adventure and simulations games described by Cavallari et. al. (1992). These authors note that the terms adventure and simulation are often interchangeable and offer the following definition. "An adventure game is a software program which presents an artificial environment with which the user must interact in order to solve the problems presented in the game"(Cavallari, et. al. pp. 173).

While adventures are based around narratives and simulations attempt to model real world situations they do these things using very similar virtual representations of reality. Lost Lake attempts to meld the adventure genre of programs like Myst or more simply, Cosmic Osmo, with the simulation of an environment offered by programs like Lake Iluka, the Sim series or the text based simulations published by Jacaranda.

Where the Lost Lake package differs from the most adventures lies in the absence of actors or characters around whom a narrative plot can be developed. This deficiency points to one of the ways the package could be used as a template. Using only the linked landscape stacks the package provides a scene in which to set a student constructed narrative. Several sets of the same linked landscape stacks could be used to simulate the progression of time as in acts of a play.

Lost Lake as a computer based text

Another way is to think of the Lost Lake package is as a computer based text, a sort of multimedia text that is particularly interactive. Derewianka defines a text as "any meaningful stretch of language - oral or written." (1990 p.17). This is indeed, the traditional view of text. In this sense words, written down or spoken, that have some unifying attribute, are a text. Words from a conversation or a discourse carried on over time may be recorded and collated on a media that makes them transportable, and be called a text. Lost Lake makes use of wording that conforms to this print based view of texts. The Information, Data and Puzzle pages of the main 'Contents' stack are constructed to appear like pages in a book. However this package is also a text in a broader sense. Downes and Fatouros suggest that "the notion of text must be redefined to include:

5. Texts spoken, written, viewed, performed and used
6. Personal and mass communication
7. Traditional and electronic texts." (1995 p.7)

Halliday and Hasan consider that text has many aspects. They see text as functional, existing in the world and operating as a social exchange of meaning. To these writers text "is made of meanings" (1985 p.10). Text is both a semantic product and a process but most importantly "text is language operative in a context of situation" (1985 p.117). By seeking to immerse the user in the linked visual representation of this locality and by relating the puzzles to that place the Lost Lake package has tried to embed their learning in an authentic situation. The questions that make up the puzzles are intended to use the evidence of this context to bring the user to an understanding of the broader themes that the package explores. To do this the puzzles prompt the user at a number of levels. They sometimes seek information and ask the user to attend closely to the scenes in the linked image walk through of the lakeside. At other times these questions try to involve the user in a process of discovery that goes beyond this specific fictionalised world and into their own generalised reality.

That this "microworld" is created virtually and is represented through the screen of a monitor is of significant import. The information technology necessary for the Lost Lake to exist imparts its own set of qualities and limitations on this multimedia text. In the same way that the technologies of the printed book evolved, ie page numbers, indexes, footnotes, size and texture of paper, computer based texts have and will continue to refine their relationships with the humans that use them. "The computer is ultimately a structured dynamic communication medium that is qualitatively different from earlier media such as print and telephones. Communication is not a process of transmitting information or symbols, but one of commitment and interpretation" (Winogard & Flores 1987, p.176).

Lost Lake attempts to take advantage of the choices offered by the technology to place a degree of authorship into the hands of the user. In addition to the use of these stacks as templates the package, as it begins, offers users a number of choices. Decisions about pathways through the linked landscape or about which of the available tools to use allows the users to shape their experience of the package. Intentional redundancy is designed into the information landscape of the Lost Lake. There are two types of note taking stacks. There are two ways to move around the linked landscape. Movement can be sequential with the user 'mouse clicking' from one scene to a number of adjacent scene. Alternatively, the user can jump to the Map screen and re-enter the landscape at any point.

Computer based texts provide immediate, informative, precise and consistent feedback in response to users' actions. They have a hidden author (the software designer or the author of the file) but the users may be authors as well. Users adapt the text that the original authors provided. They make changes and edit the available material. In doing so they construct their own new knowledge based on what others knew. In this way users of computer based texts have more opportunity to direct the course in which the text evolves and changes. Once it has been published traditional text is fixed but computer based texts are, by definition, never fixed. (Nanlohy, 1995). The Lost Lake package, even in a runtime, non-authorable version, can be viewed in many different ways and consistently responds to the user's actions.

Lost Lake as a learning environment

The degree of interaction inherent in the computer based text of Lost Lake is also what defines it as an immersive learning environment. The investigation of the Lost Lake community draws the users into this location as though they were virtual tourists. The areas featured in the linked scenes are those that visitors to such a lakeside would use. However there are a number of scenes included in the walk through that are meant to engage the users at a deeper level. The bushfire scenes, the properties for sale, the close up look at things like the bird life and the prawn fishers signs are intended to draw the users into a closer, more narrative relationship with the location. The questions posed in the puzzle pages seek opinion and feelings as well as facts. The motivation of users is increased by the development of such a relationship. It would have been better if real or cartoon people could be included to add a further dimension to the learning environment. FitzGerald and Lester look forward with unflagging enthusiasm to such learning spaces, predicting that "the convergence and integration of artificial intelligence, digital libraries, and immersive environments ... will give rise to a new generation of interactive learning systems that will fundamentally alter the education process." (1997 p. 127).

On the other hand Snyder is wary of technocentric enthusiasms. She suggests that hypertextural environments might suffer the same narrow scrutiny as a tool to improve students learning, as did word processors in relation to childrens' writing. With out appropriate examination the worth of such learning environments may take longer to define. It is worth quoting her description of hypertext as it helps to highlight the essential quality of the Lost Lake package as a computer based text. "A hypertext is constructed partly by the writers who create the links, and partly by readers who decide which threads to follow." (1997. p.126). "Hypertext differs from printed text by offering readers multiple paths through a body of information: it allows them to make their own connections, incorporate their own links, and produce their own meaning." (1997. p.127).

Lost Lake as an opportunity for student evaluation

Evaluation seeks to "determine student success in learning." (Kemp et. al. 1998, p.162). What is being evaluated is the achievement of the goals of the learning materials. Two types of questions need to be answered. How should the learning materials be improved while they are being used? How effective were the materials by the time students had finished them? Formative evaluation reveals how well the learning program is meeting its goals as it is progressing. Summative evaluation seeks to determine the success of the materials when learners have finished using them. When multimedia authoring is used in classrooms formative evaluation takes on an additional role. It provides opportunities for students to examine their own learning and to modify their experience by modifying the multimedia products on which they are working. The reflective question "How well am I learning?" has a echo in How well is this project I am making helping me to learn?"

The sort of evaluation methods used with the Lost Lake package will be dependent on the context in which the package is used. In the intended classroom context teachers would use a range of evidence collection methods to better understand the value the experiences their students. They will assess their students' progress towards the achievement of the learning outcomes detailed in syllabus documents. Work samples would be collected and annotated for presentation in a student learning portfolio. The stages in stack development described previously are one set of criteria against which student progress can be measured. Structured observations would be used as a formative evaluation tool to track how the students were progressing with the package. These are important when individual student contributions to group projects are being assessed.

Most importantly the best quality formative evaluations are created when teachers participate in the groups that are using the package. If they engage with their students while exploring or extending the Lost Lake environment they will be rewarded with opportunities to ask reflective metacognitive questions. These "teachable moments" give teachers a chance to listen to the quality of answers their students are capable of making. Formative evaluations will allow teachers to adjust the ways they employ the Lost Lake resource in an effort to improve outcomes for their students. The totality of student evaluations, evaluations by students and any post testing conducted by the teachers can be used to assess to what extent the package has helped students to achieve their learning outcomes.

Conclusion

As modes of communication become more visually orientated it is important that students are able to critically evaluate the means and messages of that communication. The use of multimedia authoring software by students provides opportunities for them to develop insight into the making of meaning in this medium. More importantly authorship for an audience motivates students to understand the content and concepts included in their publications more deeply. The use of simple and extended templates prepared by teachers supports student's learning. Further, the authorship seeded by template use encourages ownership of the resultant publication and a developing academic autonomy in students.

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End Notes

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[1] The Lost Lake HyperStudio stack was originally conceived as a whimsy. It is homage to the Lake Iluka CD, a breakthrough piece of educational software that redefined the depth of simulation previously available. The series of images used in the Lost Lake demonstration stack were created by chance. Whilst driving south between Perth and Margaret River the author happened to catch sight of a street sign pointing to an Iluka Ave. He stopped to photograph the sign and found that there was a "lake" at the end of this short street. He went for a walk along a portion of this lakeshore taking photos as he went. Three rolls of film later he continued his journey. Most of these images and the demonstration stacks have been included on this conference CD and given an educational copyright. There is a shortage of images available for school use. The means of creation of images relevant to our students and to their curriculum is now in our hands. Copies of these resources can be obtained from p.nanlohy@uws.edu.au

[2] Please see the Mathematicians and Alfords Point stacks in the Students folder of the Hyperstudio section of the conference CD.

[3] An example of such a content free template is the Template stack that can be found in the Hyperstudio/Inservice/Templates directory on the CD.

Multimedia authoring for school students: An Introduction to Hyperstudio

Phil Nanlohy: University of Western Sydney, Macarthur; Faculty of Education

Abstract: This paper examines a program of long standing that is used by students to create multimedia products in many schools around the world. This discussion will summarise briefly the way this program works, its user interface and what design constraint are imposed by its particular capabilities. Finally cross platform conversion, licensing publishing of the program files will also be discussed.

Introduction

As computing resources capable of supporting multimedia authoring have become common in schools students and teachers have begun to explore the educational benefits of this activity. Authoring requires planning and research as students assemble the text, graphics, sounds and other media files that support the message they wish to communicate as they demonstrate what they have learnt. The program featured in this paper was first released by Rodger Wagner Publishing Inc. in 1988. It has always been targeted at school and home use and has been continually evolved as the supporting hardware has developed. While being in the same general classification of multimedia authoring software as programs as Apple Media Tools, Authorware or Director it is significant in that this program is designed for school aged students.

Hyperstudio

HyperStudio version 3.1 was released in 1997. The HyperStudio reference manual describes the program as "Software for a mediacentric world". It is designed to be used by young children and yet be fully featured enough to be competitive with low-end multimedia authoring tools used by adults. The program is intended for novice multimedia publishers and is provides support as they learn how to use the program. A series of help screens automatically appear as the user steps through the stack creation process. This level of assistance can be toggled on and off as required.

HyperStudio has been strongly supported into the education market. The company provides versions of the program, limited to a small stack size and one save, free to interested users. This CD comes with a collection of sample stacks that have been created by peers of the target audience. The company's design philosophy is featured on their web site. They say that their "philosophy is user-centred, because people learn by doing" and that their "approach is constructivist, because people learn best when they create meaning using multi media tools." [12]

To implement this philosophy the company has created a program that supplies all the tools that are needed to make multimedia products and whose processes are automated as much as possible. Text, sound, graphics and video do not have to be created prior to working with HyperStudio but can be recorded using options within the program. A major emphasis has been placed on making a variety of multimedia resources available to users of the program. Graphic images can be sourced from within the program directly from a disk file, a video digitiser such as a VCR, a Camcorder or a digital camera. Movies can be imported from a disk file, a video source or a laserdisk player. HyperStudio will support live video and Quicktime VR.

HyperStudio User Interface

Based on the Hypercard metaphor of stacks and cards this program has been developed and enhanced over the years. Cards have a background layer and a card or objects layer. HyperStudio has three types of active objects that can be placed anywhere on a card. These objects have a number of attributes and can all be the site of hyperlinks to other cards or stacks. Combinations of text, graphics, sounds and videos are used to structure each card. The three available objects (buttons, graphics and text fields) each provide a choice of features and actions. Events (such as a mouse click) within an object can trigger one or more actions. It is these actions that give the program its interactivity.

The layers of action built into the program give it great versatility. Three types of objects and associated options allow users to create stacks with which other users can interact. Buttons (8 types x 5 features), Graphic objects (one type x 4 features) and Text fields (10 combinations of 4 attributes x 4 features) options are all set with in a predictable series of dialogue boxes. For example, the Actions dialogue provides one choice of 9 ways to link to other locations in combination with 7 things that can happen when the link is activiated. All these choices give a theoretical 403,200 possible combinations with which to construct the design elements used on cards and stacks. In reality only a few thousand of those combinations are used but this is sufficient to foster the creativity of those who use it.

At the experienced users level an extra layer of object attributes, called Features, is made available. One example of a useful option in the Features dialogue box would be the availability, for all object types, of rollover triggered changes in cursor appearance that signal active areas of the screen. Entering into, clicking on or leaving a Card or Stack are also events that can trigger a set of actions.

HyperStudio has a number of unique features. The New Button Actions (NBA) are plug in files that allow new capabilities to be added to the program. Most of these are created by the community of users and supplied free of charge. This feature lets users replace scripting with a dialogue choice and so keeps the program easy for novice users to master.

HyperStudio's frame- and path-based animation capabilities menu and dialogue driven and are editable. HyperStudio has a number of Photoshop plug ins and QTRV creation utilities that give it an enhanced graphic capacity. HyperStudio also has a simple testing function that allows buttons to be defined as right and wrong answers to questions. The program will export a text file summarising a student's responses.

HyperStudio's interface often seems cluttered with a cascade of dialogue boxes intended to help the novice user. While these can be reduced there is a trade off between ease of use and the number of interactions with menus or dialogue box choices that must be made. The use of space on a card needs to be carefully planned so as not to create a cluttered appearance. Sequencing and timing action on a card requires use of scripting which is often beyond the experience of the users for whom the program has been designed.

Scripting

This is based on a Hypertalk like language. Like HyperLogo scripts written in this language are event driven and object oriented. An event, like a mouse click, sends a message up the Object-Card-Stack hierarchy until a scripted handler intercepts it and triggers the appropriate action in the target object. While the syntax is different the process is similar to that used in the HyperTalk language used in HyperCard.

Many common functions that could be scripted into stacks can be achieved by using New Button Action (NBA) from the Action dialogue box. An example would be the HIDESHOW NBA that could also be achieved with the following script. Variations of this hide and show object toggle can be used to hide and reveal object on target cards.

```
;Hide and Show the Label
IF VISIBLEP [] "Welcome "text [HIDEITEM [] "Welcome "text] [SHOWITEM [] "Welcome "text]
```

Cross Platform Conversion

HyperStudio stacks created on a computer running the Windows operating system will open and run without alteration in a Macintosh environment. Stacks created on a Macintosh computer need to be saved with a Windows compatible filename of no more than eight letters and the .STK extension. When the stacks are saved with this extension the program will trouble shoot the stack to make it ready to be moved.

Figure 1.

HyperStudio
Text
When changing platforms the program makes a translation of fonts so that, Geneva on a Mac becomes Arial on a Windows computer and Helvetica becomes MS Sans Serif. This may mean that the formatting of the text may change with the move. HyperStudio has packaged a number of common fonts for both platform so that if these fonts (School Boy, Wrangler) are used then the problem is eliminated. Text in text fields will be affected by a cross platform move. The appearance of the text is based on the installed fonts for the computer on which the stack is run. Text that has been typed onto the background layer (using the Paint Text Tool from the Tools menu) is painted onto the card as a bitmapped graphic. The appearance of this text will not be affected by a move.
Sound
External sound files need to be uncompressed and converted to the .wav format when moving to the Windows environment. The Macintosh version of the program will uncompress sounds automatically when files are saved with the .STK extension. Built in sound recording and playback. Linked sound files need to be packaged in the same folder as the stack that will use them.
Graphics
Painted bitmap graphics and those held as graphic objects will move across the platforms. The Windows version of the program prefers a palette of 256 colours so it a good idea to make this change with the About This Stack dialogue box from the Objects menu. HyperStudio offers a choice of palette and has an option to lock colours on a card by card basis. As with text the graphics will change less if they are painted onto the card background
Movies
Movies recorded by the Macintosh version of HyperStudio program itself will move without alteration. Those recorded with the Windows version need to be converted from the .avi format to the .mov (Quicktime) format. Movies will run on a Windows computer if it has Quicktime for Windows installed. The movie needs to have been "flattened" or made cross platform compatible. Because of their size movies are never stored within the stack.

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Any resource files (graphics, sounds) that have been saved externally and linked to the stack must be moved and held in the same direction as the stack. While the program has been designed to allow stacks to be moved there are some conditions to be met that are based on the different ways the two platforms handle multimedia resources. A discussion of these differences and some similarities are summarised in Figure 1.

Licensing and Publishing

HyperStudio is sold as a single user pack with software on floppy disk, separate Program and HyperLogo Reference and Tutorial documentation and a resources CD. It also comes as 5 or 10 copy lab packs. Beyond this number the site that has bought a single user pack can purchase site licenses for each computer on which they wish to run the program.

HyperStudio is supplied with a run time version of the software that may be distributed license and royalty free with any stacks that have been made. This means that the end user does not have to have the full authoring version of the program in order to use a HyperStudio stack. This software is known as the HyperStudio Player (the Player) There is a Player for the Macintosh and for the Windows platform. The Player is also a "crippled" version of the software. It is fully featured but will only create new stacks of up to four cards and will only save them once. It will read previously created and saved stacks.

The availability of player software creates the possibility for creators of stacks to share their work. Floppy disks become a medium of exchange. Where available Hyperstudio stacks may be distributed using the Internet. A plugin is available for HTML browsers that allow stacks to be displayed on the World Wide Web. The CD that accompanies the conference proceeding in which this paper has been published also contains an extensive collection of Hyperstudio stacks. These are meant to be used as examples and templates by students learning to use this program.

References

Wagner, R. (1997) HyperStudio: Software for a Mediacentric World, California: Rogder Wagner Publishing.

EndNote

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[2] The company site can be found at http //www.hyperstudio.com/hsstory/background.html

Lost Lake Lessons: The Making of a Democratic Learning Environment

Phil Nanlohy, Uni Western Sydney, Macarthur, Faculty of Education

Abstract: The paper explains thinking behind the construction of the Lost Lake set of demonstration stacks. The purpose of the stacks in the set, the way they has been structured and the methods used to create their interactivity are described. The HyperLogo scripts used in the construction of these stacks are outlined.

What is in the Lost Lake?

The author of the Lost Lake package has provided users with alternative methods of interaction with the learning environment it creates. Users have choices as to how they navigate through the stack, how they access the information found in the stack and about which of the challenges they take up. In this way the learning environment can be said to be democratic.

The Lost Lake stacks can be used as a stand alone hypermedia product or a set of HyperStudio templates to be changed and modified at the user wish. The stacks have been designed to allow users to exercise choice over the ways they navigate through the virtual space that the stacks portray. The three main ways are via the Dyna book, the Map Page or the Linked Landscapes.

The information contained within the stacks can also be accessed in a number of ways. There are a number of information sources linked to the Contents page. These are; an Introduction, some Puzzle Pages which pose the questions that can be answered in the linked landscape, some Data pages with factual information and a Review section that tests the users comprehension of the information presented. In addition Popup text field are available in some of the lakeside scenes.

The Dyna Book

The introduction to the stacks leads the user to a card that is organised as a Dyna book. This concept was first introduced by Alan Kay when discussing Hypercard, the first hypertextural authoring for the Macintosh computer. A book metaphor has been established through the use of graphic image used to define the appearance of the main navigation page which used the bookish term Contents. The Contents page leads to an Introduction, a Map Page, a Note Book, to Puzzle Pages, Data Pages, Clue Cards, a Quit button, a Review or test stack and to the linked landscape via a image of the lakeside park.

The Map Page

This is assessable from the Contents page and provides an overview of the Lost Lake environs. The user of the stack can gain a quick access to any scene within that area. The Map simplifies the terrain and provides labels for the main points of interest. The arrows on the map page give access to each scene in the linked landscape.

The Linked Landscape

Approximately fifty scenes are linked together to provide a walkthrough of the lakeside environment of this area. The central scenes are rich with interactive elements that give access to details of that part of the environment. The rest of the scenes are not complete in this way. They have been set up to link the terrain and to provide a template that the user may embellish. The use of the HyperLogo programming environment to achieve this end is described later in this paper.

The Note Book and the Clue Cards

Two pages are available in the central stack that facilitate the recording of notes. The Note Book supports students recording of their experiences with the Lost Lake stacks. Their writing can be saved as a text file, can be reloaded into the card for editing and can be printed. The ability to load saved files allows teachers to provide scaffolding for particular text types, such as narrative or information report, to assist students in their writing.

The Clue Cards page is similar to the Note Book page but is set up to prompt students to write puzzles based on the information within the Lost Lake environment. It is intended to encourage discussion and exchange between the groups of students within a class or who are using the package at a particular point in time.

The Puzzles and Data pages

These pages are part of a two fold information flow design for the package. These pages provide factual information about the location. The second way of collecting information is to visit the sites in the linked landscape. These sources of information are complementary and would focus on topics exemplified by different areas of the landscape such as:

24. Fishing for Prawns and Crabs shown by signs and advertising
25. Recreational use of the lake shown by the Boat ramp area
26. Functions of the shop in this small community
27. Finding the real location from clues in the area
28. Government regulations and protection of humans and the fish species
29. What birdlife can be found around the lake
30. Bushfires and their effect on the local flora
31. Building and selling houses.

Review Your Knowledge

Another choice afforded to the user of the Lost Lake stacks is whether or not to use the "Review Your Knowledge" pages. These are the proscriptive learning environments. They have briefing pages that present a question, explain the steps to complete the process and then define the criteria for success.

The use of HyperLogo Scripts in the Lost Lake

HyperStudio allows scripting of events within stacks through the use of a Logo like language called, predictably, HyperLogo. Scripts can be attached to any object that has Action capabilities or to a stack upon opening or closing. The use of programming plugin modules called New Button Actions (NBA) allows scriptable actions to be used by non-programmers. The scripts described below were adapted from the reference manuals that are supplied with the program. Their use is well within the capabilities of senior primary students whose facility with this type of programming has been demonstrated in many schools that have used the Logo language or its derivatives over the last two decades.

The Splash screen and gaining the users' attention

The scripting in this introductory stack was needed to synchronise a sequence of on screen actions that were intended to engage the user of the package. The sequence begins automatically with an animation that includes a voice over. This introduces Larry, the user's cartoon assistant and suggests an action. Before this finishes a welcome banner appears that reinforces the action required of the user. When the user attempts to click on the suggested book it flies away and leads the user to an invisible button that links to the main stack. The purpose of this card was to gain the user's attention, to introduce Larry and the book metaphor used throughout the package and to lead the user to the central distribution stack. The following script runs the actions of this introduction.

```
;Wait for Larry to do his thing
Wait 600
```

```
; Show then hide welcome card
SHOWITEM [] "Welcome "text
Wait 360
HIDEITEM [] "Welcome "text
```

The Welcome card can also be toggled with a mouse click using the following script. It sets up an If Then Else condition. When the button attached to the text field "Welcome is clicked check to see IF the condition VISIBLEP [on this card] is true or false. If it is true and the object "Welcome is showing run true list [HIDEITEM [] "Welcome "text] to hide it. If the condition is not true and the object "Welcome is hidden run the False list [SHOWITEM [] "Welcome "text] to show it. Variations of this hide and show object toggle have been used all throughout the Lost Lake package. The New Button Action (NBA) HIDESHOW also achieves this end.

```
;Hide and Show the Label
IF VISIBLEP [] "Welcome "text [HIDEITEM [] "Welcome "text] [SHOWITEM [] "Welcome "text]
```

The dog character Larry is the main method for prompting focused attention from the user. Retaining and extending the user's motivation is achieved by placing them in the landscape which they can view from a personal perspective. They are prompted to think and talk about the animals and people who inhabit the localities within this landscape.

The Contents Stack

Descriptions of each entry on the contents page have been annotated a pop up text field using a variation of the VISIBLEP script above. Descriptive labels toggle over each item in the content list. The purpose of the labels and the information pages is to orient the user to the sections of the Lost Lake package. The book metaphor is maintained with graphics that present a consistent page like appearance.

Information Pages and Data Pages

These pages of the Contents stack preview some of the knowledge that can be found in the stack. The pages do not use scripts. The navigation is achieved through invisible buttons that are linked with the menu choice/ dialogue box system that HyperStudio uses for most of its functions. The information pages explain what is available in the package. The Data pages preview the content of the section of the package that the DataTest stack reviews with its questions. hem what the different sections of the package do and to suggest ways they might approach this learning environment.

DataTest Stack

This stack uses a set of scripts that have been adapted from page 45 of the Hyperlogo manual. These testing pages compare typed input from the user with a list of possible responses provided by the stack designer. The first script checkAnswer gets the answer to a question typed by the user into the text field "User Input and puts it into the variable "userText . It then compares this, using EQUALP, to the variable "correctAnswer. It uses the IF statement to give the appropriate response depending on whether the two variables match. The second script allows the userInput to be compared to MEMBERS of a list of answers.

```
; Compare user input to correct answer and provide feedback to the user
TO checkAnswer :correctAnswer
LOCAL "userText
MAKE "userText GETFIELDTEXT [] "User\ Input
IF EQUALP :correctAnswer :userText [SETFIELDTEXT [] "Feedback "That\'s\ right.\ Good\ Job.]
[SETFIELDTEXT [] "Feedback "Sorry,\ that\'s\ incorrect ]
WAIT 120
SETFIELDTEXT [] "Feedback "
```

```
END

; compare user input in list to correct answers and provide feedback
TO checkList :correctAnswer
LOCAL "userText
MAKE "userText GETFIELDTEXT [] "User\ Input
IF MEMBERP :userText :correctAnswer [SETFIELDTEXT [] "Feedback "That\'s\ correct.\
Fabulous\ Job.] [SETFIELDTEXT [] "Feedback "Sorry,\ that\'s\ incorrect.]
WAIT 120
SETFIELDTEXT [] "Feedback "
END

; Pass correct answer list to checkList procedure
checklist [Prawns prawns PRAWNS Crabs crabs CRABS Prawn prawn PRAWN Crab crab CRAB]
```

Carpark and Park Stacks
There are three types of hide and show in this stack. The Larry character hides and shows a thought balloon to indicate that the card should be investigated. The balloon can be toggled on and off. This can be achieved with either the VISIBLEP command as below or with the HIDESHOW New Button Action.

The second type of hide and show reveals a text field. The text indicates the sort of information that can be found in the scene and suggests some questions to investigate. On the first card of the stack a graphic and a text field are revealed at the same time. The scripting to flip a Graphic "Galahs4" and a Text field "GalahInfo" at the same time is as follows.

```
; Hide and Show the Label and the 'Galahs4 graphic
IF Visiblep [] "Galahs4 "graphic [HIDEITEM [] "Galahs4 "graphic] [SHOWITEM [] ""Galahs4
"graphic]
IF Visiblep [] "GalahInfo "text [HIDEITEM [] ""GalahInfo "text] [SHOWITEM [] "GalahInfo "text]
```

On exiting the car the graphics are reset using the following scripts

```
; hide button on card exit
HIDEITEM [] "Spin "graphic

; hide the Lable and the graphic
HIDEITEM [] "GalahInfo "text
HIDEITEM [] "Galahs4 "Graphic
```

The third Hide and Show reveals a navigation button within a navigation button. Usually when the area at the bottom of the screen is active the user retreats one scene but remains facing the same way. On two occasions this move is a 180 degree turn and this has been indicated by the revealing of a "spin graphic" button that must be clicked to activate the about face move. The HideShop NBA is used in conjunction with an invisible button to toggle a graphic object which in turn activates the 180 degree turn. The following script hides the graphic object on card exit.

```
; hide button on card exit
HIDEITEM [] "Spin "graphic
```

To Be Continued card
At either end of the Linked Landscape there is a "To Be Continued" card. An adaptation of the VIVIBLEP script has been used to toggle a Text field and a button that returns the user to the last card visited. The variation with this use of the script was that both a pop up text field and a button had to be shown at the same time. The script is as follows.

```
;Hide and Show the Label and the 'Return to last page' button
IF Visiblep [] "Continue "text [HIDEITEM [] "Continue "text] [SHOWITEM [] "Continue "text]
IF Visiblep [] "Back\ to\ the\ last\ page. "button [HIDEITEM [] "Back\ to\ the\ last\ page. "button]
[SHOWITEM [] "Back\ to\ the\ last\ page. "button]
```

On card exit both button and the pop up label needs to be hidden ready for the next visit.

```
; hide the Lable and the button
HIDEITEM [] "Back\ to\ the\ last\ page. "button
HIDEITEM [] "Continue "text
```

Clue Card and the Notebook

These two stacks make use of scripts from the HyperLogo manual that facilitate the saving and loading of text files. These stacks are primarily intended to enable the users of the package to export notes and questions for further use. Another use of this feature would be to write templates to assist the students to structure their writing in an appropriate way. The sample Recount template has been written to assist student use the Notebook to record their impressions of the Lost Lake.

On arrival this script is loaded into the HyperLogo workspace. The procedure SaveFile is called by the last of this set of scripts. It looks for two inputs. The card the text field in on and the name of the text field that the user has typed into. In this case the empty brackets [] indicate the current card and the text field is called saveText. Loading the file is achieved through a Callback to the Hyperstudio program and is loaded into a field called loadText.

```
; Saving a text file
TO SaveFile :card :itm
LOCAL "file
MAKE "file GETFIELDTEXT :card :itm
CBSETCMD 101
CBSETPARAMSTRH 1 :file
CBSETPARAMSTR 3 :itm
CALLBACK
CBDISPOSEPARAMH 1
END

; Loading a text file
TO loadFile
CBSETCMD 100
CALLBACK OP CBGETPARAMSTRH 1
END

;load a file
SETFIELDTEXT [] "loadText LoadFile

;call the save file procedure
SaveFile []"saveText
```

These stacks also have the ability to reproduce themselves a card at a time. The DOMENU primitive allows calls to the menu structure of the program.

```
;setting up a new one card copy of this stack
domenu "Edit "Copy\ card
domenu "Edit "Paste\ Card
```

Farewell

This stack is called by the Quit button on the Contents page. A text field with instructions is presented then hidden using the script below. The VISIBLEP script is attached to a button over this field so it may also be toggled.

```
; Show then hide Farewell card
SHOWITEM [] "Farewell "text
Wait 300
Hideitem [] "Farewell "text
```

This Alert box script allows a choice of quitting (for the third time) or beginning again. The MAKE primitive sets up a variable "temp that waits for an input from the Alert box created by the DOALERT primitive. If the user presses the marked alternative Bye! "temp gets the value of 2. The IF primitive is then true and so executes the QUIT primitive.

```
MAKE "temp DOALERT 4 "Note 'Are\ you\ sure\ it\ is\ time\ to\ go?' [Not\ Yet ^Bye!]
IF :temp = 2 [QUIT]
```

Conclusion

This discussion of the components of the Lost Lake suite of HyperStudio stacks has shown something of the mechanics of producing a democratic learning environment with this program. The generation of similar virtual location is not a difficult task[1] and is a suitable vehicle for a wide range of learning tasks required by state syllabus documents. Given the required computing resources the first step is to go into the landscape you wish to capture and photograph it. Photograph points of interest to the study you will be doing. Photograph sequential scenes in the pathways you take through the landscape. If you can beg or borrow cheap means of capturing you images take panoramas at key points on the landscape as HyperStudio can be used to create 3D Quicktime movies. Once you have your images the rest is open to the imaginations of you and your students.

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[1] Look for the SchoolJPEGs folder on the NSWCEG99 Conference CD for just such a collection. It was shot on the streets around Summer Hill Public School on ANZAC day 1999.

Working as a team across the Internet

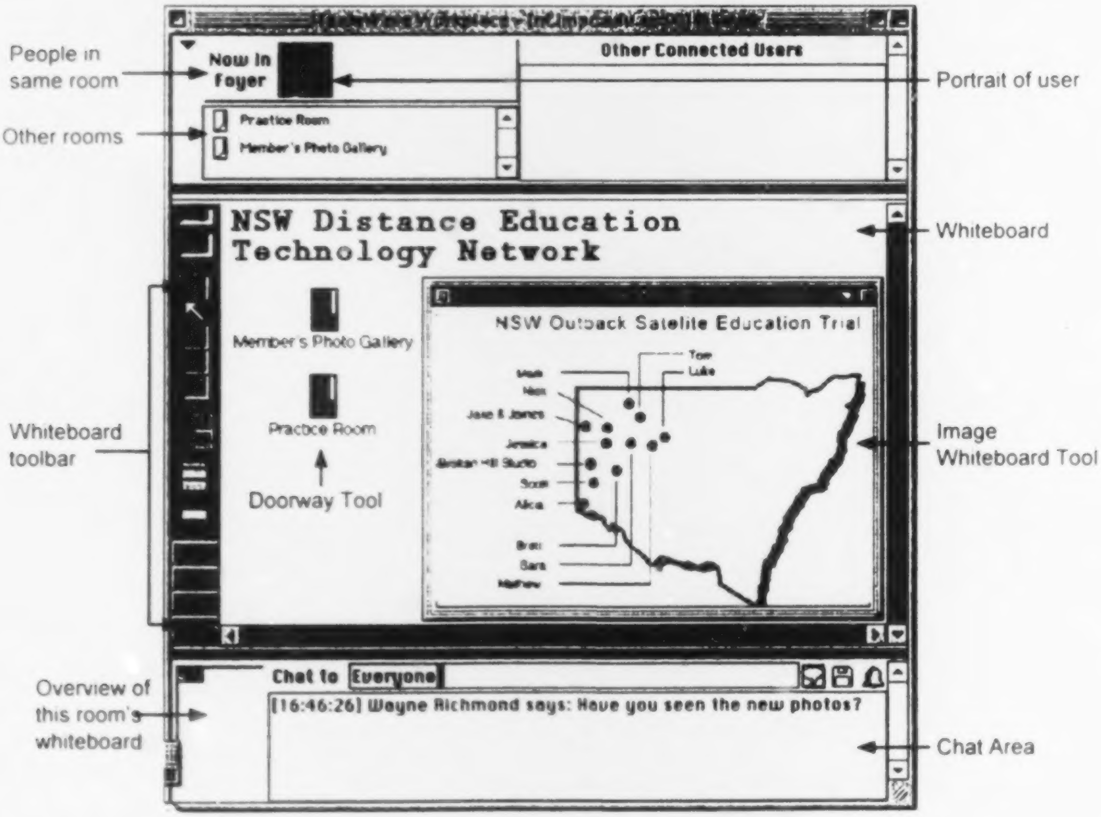
Wayne Richmond, SEO2 Educational Technology, OTEN (wayne.richmond@lmpc.edu.au)
David Heggie, Distance Education teacher, Southern Cross DEC (surfsail@om.com.au)

Abstract: In real life, teams use rooms to discuss matters, brainstorm ideas, scribble diagrams on a whiteboard etc. They also use rooms to store/display things (draft reports, drawings, references etc.) for other members to look at/modify/add to at any time. TeamWave Workplace is a cross platform Internet-based software package which allows these sorts of collaborations to take place over the Internet in a set of virtual meeting rooms. Not only does this mean that geographically isolated teams can work together but also groups of school students and/or teachers can use the virtual rooms as places to permanently store shared resources.

TeamWave Workplace rooms can be used for real time communication (such as Electronic Classroom and other audiographic programs) but the program's distinctive feature is that, unlike Electronic Classroom, whatever is created in the room stays there, unless deliberately removed by someone, and be revisited outside lesson times.
A teacher could ask students to "Find a picture of a _______ and leave it in the Assignment Room before Friday for us all to look at."
A teacher could tell the students to check back in the room on Thursday by which time she will have set up a number of web links for them to investigate.

The Interface

Each room consists of a giant whiteboard which can be written/drawn on by anyone at any time using the basic drawing tools in the toolbar on the left. There is also a text chat area at the bottom, and lists of other rooms and current on-line users at the top.


People in same room
Other rooms
Whiteboard toolbar
Overview of this room's whiteboard
Portrait of user
Whiteboard
Image Whiteboard Tool
Chat Area
Now In Foyer
Other Connected Users
Practice Room
Member's Photo Gallery
NSW Distance Education Technology Network
Member's Photo Gallery
Practice Room
Doorway Tool
NSW Outback Satelite Education Trial
Tom
Luke
Jessica
Chat to
Everyone

[16:46:26] Wayne Richmond says: Have you seen the new photos?

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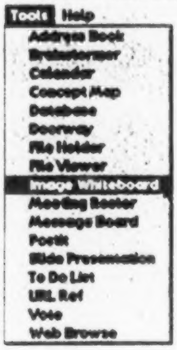
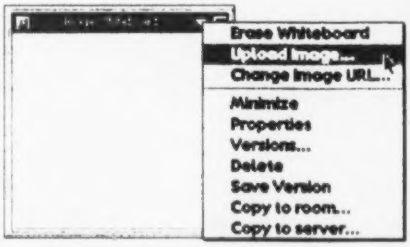
TeamWave Workplace Tools

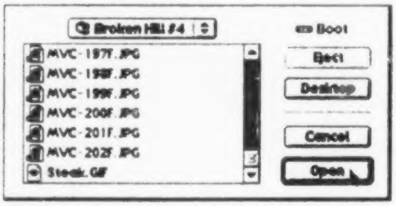
All rooms include a shared whiteboard that keeps its contents permanently unless deliberately erased. There is also a simple text chat facility that is adequate for ad hoc communication. Some other means such as a teleconference would need to be found for serious real-time communication.


Tools
Help
Address Book
Brainstormer
Calendar
Concept Map
Database
Doorway
File Holder
File Viewer
Image Whiteboard
Meeting Roster
Message Board
PostIt
Slide Presentation
To Do List
URL Ref
Vote
Web Browse

These basic features are very much enhanced by a set of seventeen tools that can be used in any combination in any of the rooms.
To place a tool in a room all you have to do is select it from the Tools menu.
To show you how easy it is to use these tools lets see how we would use the Image Whiteboard tool to place a picture in a room and then annotate it.
First I select Image Whiteboard from the Tools menu.

All tools have their own menus which are used for setting parameters, deleting, etc.. In this example I am selecting Upload Image so that I can upload a GIF image into the Image Whiteboard tool.
Alternatively I could have typed/pasted in a URL to a GIF image on the Internet to establish a permanent dynamic link.


Erase Whiteboard
Upload Image...
Change Image URL...
Minimize
Properties
Versions...
Delete
Save Version
Copy to room...
Copy to server...


Broken Hill #4
Boot
MVC-197F.JPG
MVC-198F.JPG
MVC-199F.JPG
MVC-200F.JPG
MVC-201F.JPG
MVC-202F.JPG
Steak.GIF
Eject
Desktop
Cancel
Open

I am presented with a normal 'Open File' dialogue box allowing to find and select the graphic file I want to open/upload. Unfortunately the program will currently only allow GIF files to displayed in the Image Whiteboard.

The picture uploads to the server and back to my client (and all other connected clients).
If necessary, I can adjust the size of the Image Whiteboard tool so that all of the picture can be seen.
I (and anyone else) can then use the whiteboard tools to annotate and otherwise draw/write on the image. Such markings are on their own layer which means they can be erased/removed without affecting the image underneath.

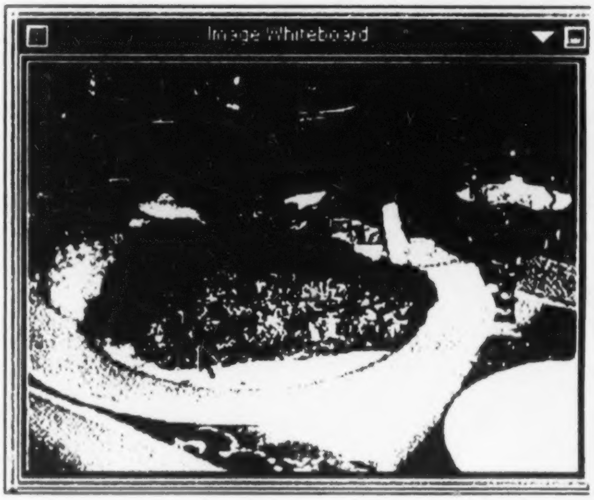


Image Whiteboard

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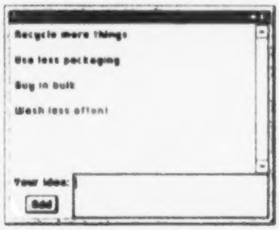
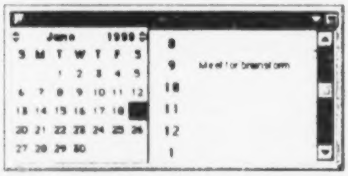
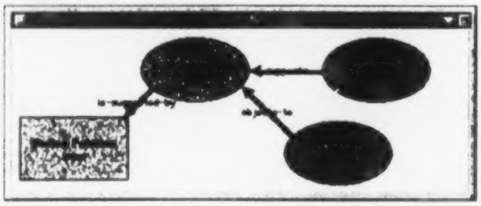
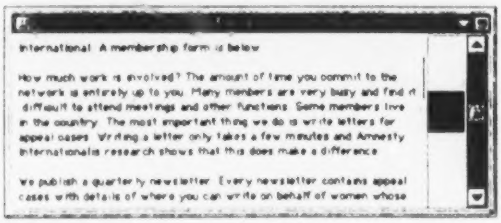
A brief summary of the other tools

Address Book		A shared address book that anyone can use.
Brainstormer	 Recycle more things Use less packaging Buy in bulk Wash less often! Your idea: Add	Used to generate ideas in any order. Ideas are listed anonymously as they are entered. It could be argued that this anonymity is an improvement on a real life 'face-to-face' brainstorming session.
Calendar	 June 1999 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 8 9 Meet for brainstorm 10 11 12 1	Allows the entry of appointments in a shared calendar.
Concept Map		A tool for organizing concepts and ideas using a visual interface. Links and node types can be added and edited.
Database		A simple configurable database similar to the address book.
Doorway	Member's Photo Gallery	A link to another room on the server. Doorways can be used to create menus.
Fileholder	Satellite Paper pdf	Provides a shared container for any type of file. All users can 'Put' or 'Get' a file in or out of a Fileholder.
File Viewer	 International. A membership form is below How much work is involved? The amount of time you commit to the network is entirely up to you. Many members are very busy and find it difficult to attend meetings and other functions. Some members live in the country. The most important thing we do is write letters for appeal cases. Writing a letter only takes a few minutes and Amnesty Internationals research shows that this does make a difference. We publish a quarterly newsletter. Every newsletter contains appeal cases with details of where you can write on behalf of women whose	View text files simultaneously with others. Coloured bars indicate where various users are up to.

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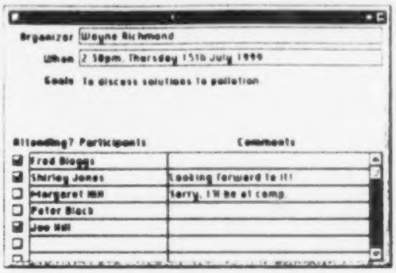
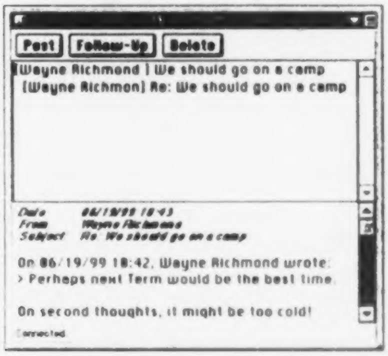
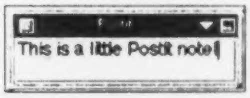
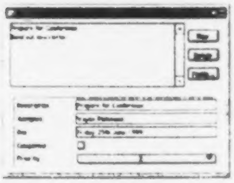
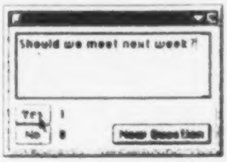
Meeting Roster	 Organizer Wayne Richmond When 2 30pm, Thursday 15th July 1999 Goals To discuss solutions to pollution Attending? Participants Comments ☑ Fred Bloggs ☑ Shirley Jones Looking forward to it! ☐ Margaret Hill Sorry, I'll be at camp ☐ Peter Black ☑ Joe Hill	Allows users to schedule a real-time meeting.
Message Board	 [Wayne Richmond] We should go on a camp [Wayne Richmon] Re: We should go on a camp Date 06/19/99 18:43 From Wayne Richmond Subject Re: We should go on a camp On 06/19/99 18:42, Wayne Richmond wrote: > Perhaps next Term would be the best time. On second thoughts, it might be too cold! Connected	Allows any number of simple newsgroup style discussions to take place.
Postit	 This is a little Postit note	A simple message tool used to place reminders to yourself or others.
Slide Tool		View and annotate Microsoft Powerpoint slide presentations.
To Do List		Keep track of what needs doing, and wha left.
URL Reference	 URL HSC On-Line	Place a web link for anyone to use. Doub clicking will open the specified web site i your browser.
Vote	 Should we meet next week ? Yes 1 No 0 	Pose a question and anonymously vote o No one can vote more than once!
Web Browser		Allows simple HTML pages to be shared.

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If you are so inclined you can write your own tools using software available free from TeamWave.

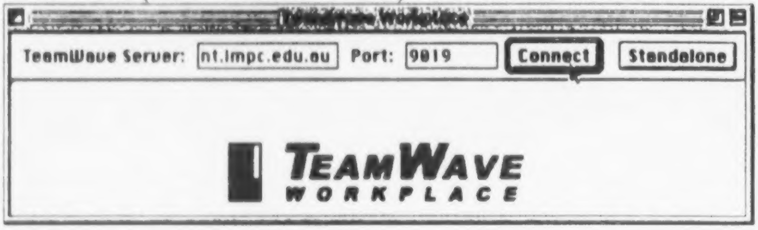
How does TeamWave Workplace work?

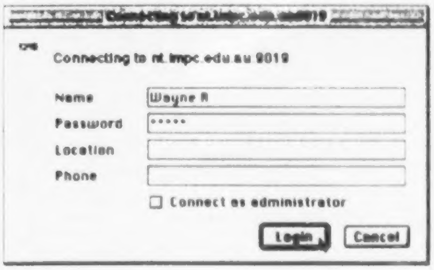
TeamWave Workplace consists of two programs - a client program and a server program.

The Client

To connect to a TeamWave Workplace server you need a copy of the client program that can be downloaded free from the TeamWave web site (www.teamwave.com).

When you open the client you will be asked for the name (or IP address) and port number of the server you wish to connect to. (The name & port number of the last used server will be there by default.)


TeamWave Server: nt.impc.edu.au Port: 9019


Connecting to nt.impc.edu.au 9019

Name: Wayne R
Password: •••••
Location:
Phone:
☐ Connect as administrator

You then enter your name and password (if any) and click Login.

If you have Admin access you can click on the 'Connect as administrator' check box to enter in administration mode to administer the server (set up new users etc.).

The Server

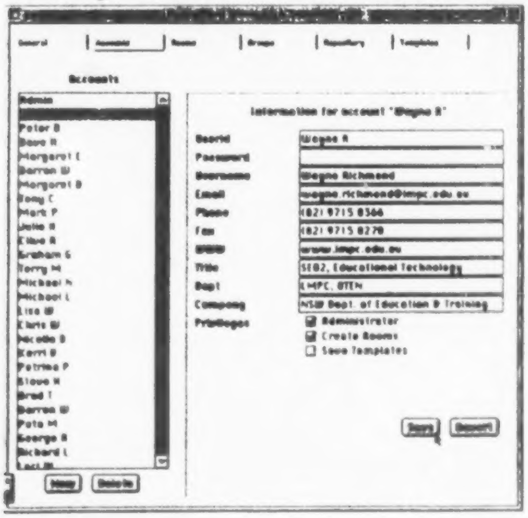
TeamWave Workplace requires a server version running on a Mac, PC or Unix computer with a permanent connection to the Internet/Intranet. Setting up the server is as simple as firing it up and entering a port number (the default is 9019) - that's all there is to it. With a bit of luck your local ISP will set one up for you.

The actual administration of the site is done using the client program and can be done from any machine on the Internet.

Setting up users

☑ Connect as administrator

This is done by opening a client version of the program and selecting to connect as an Administrator (see screen dump above).


Information for account "Wayne R"

Wayne R
Password:
Wayne Richmond
Email: wayne.richmond@impc.edu.au
Phone: (02) 9715 8566
Fax: (02) 9715 8270
www.impc.edu.au
Title: SE02, Educational Technology
Dept: LMPC, OTEN
Company: NSW Dept. of Education & Training
Privileges: ☑ Administrator ☑ Create Rooms ☐ Save Templates

Information is entered about each user including whether or not they are allowed to:

- connect as an administrator
- create rooms
- save templates

As you can see from the screen grab, there are a few other parameters that can be optionally set but essentially setting up a TeamWave Workplace server is simply a matter of entering the user information for each account.

The only thing left to do now is inform potential users of the name and port number of your server and their user names & passwords.

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Other Features

- Each time a user logs off, the server remembers the state of the room and of each tool (what is on the whiteboard, what tools are open, what is in them etc.) and it is possible to revert to any of these former states at any time. This can be handy at times when something is inadvertently deleted or messed up.
- The program tells you who is in the same room, which part of the whiteboard they are looking at and even where their mouse is.
- Users can save a log of the chat in a text file for future reference.
- Although the default settings democratically allow everyone to do anything at any time, it is possible to configure a room so that only the owner (creator) can add and/or delete tools etc.
- Windows users can open a NetMeeting session in a window within the TeamWave environment.

Highlights and Shortcomings

The producers of TeamWave Workplace (based in Canada) are to be congratulated for:

- The brilliant concept underlying the program; the simplicity of the structure and the ease of use.
- Their attempts to keep the program usable over low bandwidth connections.
- Their determination to make both client and server versions available on Mac, Unix and Windows platforms.
- Their very reasonable pricing arrangement
- Their receptiveness to suggestions for improvements.

However, there are a number of shortcomings that are worth noting:

- The interface is somewhat clunky in places - probably a legacy of the cross platform nature of production (its worth it!)
- The Image Whiteboard tool can only display GIF images.
- Some of the tools work better than others - I've never found the Web Browser tool to work properly except with very straightforward web pages.

How much does it cost?

TeamWave charges a license fee per user. If you want up to 10 users to access your server then you buy a 10 user license. The client program can be downloaded and used for free. You can also choose to purchase Guest licenses which allow anyone to access your server anonymously.

Quantity	Regular License	Education License
Single User License	US$49	US$40
10 User License	US$399	US$299
50 User License	US$1,499	US$899
Small Server Guest License (up to 100 guests)	US$1,499	US$899

Conclusion

It has always been the communication and collaboration capabilities of the Internet that have excited me rather than the bottomless pit of resources to be found on web sites. TeamWave Workplace facilitates a wide range of synchronous and asynchronous interactive and collaborative opportunities for small groups of students and/or teachers. As such it is a good example of what is possible now and a tantalizing foretaste of what is to come.

Leadership in Technology: A Luddite's Metamorphosis

Peter Scully: Deputy Principal, Summer Hill Public School

FIRST - A CAUTIONARY TALE :

This writer and his partner unashamedly admit to coming from a long line of Luddites. Both our families, four generations ago, were major carriers/ players in the cartage industry. Mine in general carriage and my partner's, in horse-drawn buses. When both families were confronted with the impending technology, they chose to believe that the " new fangle ideas" were just the latest fads that would soon disappear. Unfortunately, both family businesses didn't survive the changes brought about by that technological change, the combustion engine. I guess there are many salutary lessons from our family history that remain relevant for us today, not the least of which is to be cautious of this writer's recommendations about the future.

We cannot allow our nation to suffer from a loss in comparative advantage through being unready for the new age, the Age of Information. As Educators we must ensure all learners, irrespective of their socioeconomic circumstances, be equipped with the competencies, critical for success as learners and players in the next millennium.

As Educators and leaders, we have been given the privilege and opportunity to not only right the wrongs of the past, educationally speaking but make a genuine transformation of Education and contribute to a just society through authentic change orientated leadership. Thus reducing the gap between policy rhetoric and practice. We must not allow this unique time in history to pass us by or else we will have failed to bestow to Education, its capacity, to empower and be the critical tool, that can contribute to change and the changing of the future : at both the school level and the wider community level.

PREAMBLE :

As leaders we must help learners harness all that can assist them deal with the future. It is critical to ensure, that future citizens have the literacies and competencies necessary to negotiate a rapidly changing world. We must use technology to enhance learning and empower learners in order that they are able to take a more active role in their learning journey. In turn we can only make the necessary transformation in learning experiences and outcomes through supporting the critical people responsible for supporting learners, that is, teachers and parents. The implications for Training and Development within a Learning Community are enormous.

SYNOPSIS :

This article will focus on identifying some of the impediments to changing the way schools deliver learning and the characteristics of the learners who will be successful in a continuously changing environment. The developmental journey of one school will be shared to show the school's attempts to deal with the new learning realities and the successes to date.

MISSION :

For whatever reason and however it is, that schools have come to be, the principle site for formal learning, they will continue to have this function for some time. Therefore we must help schools, learners, and parents to recognise the necessity and urgency of our mission to develop successful life long learners who are competent users of technology.

" If we, as a nation are to compete in the global market place in the decades to come, we must become leading and proficient users of information technology ". (Goldsworthy; 1997, 1)

Whilst we as educators, would tend to agree that the school experience has resulted in better learning generally over time, there remains some doubt by many sectors of the wider community, regarding schools capacity to prepare learners for the future and for schools to address issues of equity and justice across society.

" What we know for certain is that children without access to the new media will be developmentally disadvantaged ". (Tapscott; 1997,7)

To date many of the attempts to use technology in learning has resulted in very mixed success. There has been the traditional orthodoxies emasculating the implementation of any new policy or methodology. Leaders must be ever vigilant when dealing with change, being on guard to ensure that 'form' doesn't compromise 'meaning'. That is, in our enthusiasm to embrace change and be seen to be doing the right thing, can and often has resulted in grasping the wrong or superficial aspects, due to incorrect emphasis or poor understanding. An inclination to focus on the micro aspects of something can lead to a failure to grasp the more important macro perspectives. There has been an over-emphasis on the hardware of technology as opposed to the broader ramifications for learning and the roles of those involved for example. We have the responsibility to help others frame what to change, explain why and how to implement the change.

" In a world where access to information is becoming so simple and inexpensive, the new challenge for students is learning to deal with the complexity of information and discriminating among alternative sources of information ". (Petre; 1996, 103)

Microeconomic reform may alter some undesirable practices in an industry. However the the long term broader picture, the macro-view is driven by ideologies and traditions that may have become legitimated for spurious reasons. As leaders we must address these over archiving factors first. It is orthodoxies in learning and institutional views of learning, that have produced a limit or ceiling on learning in schools. We must set about identifying anything within schools that limit learning capacity and learning opportunities of students.

LEARNING :

It has been rudely stated that if Shakespeare visited today's classrooms, there would be little to surprise him. Certainly in methodology there is much that would be familiar to him and other visitors from past centuries. Yet we are only seconds away to a new century and millennium.

Writers in the sociology of education have warned us for a number of decades to be on guard for the rising conservative forces shaping the ideologies infiltrating and influencing the directions of education today. As leaders we must be clear about the ' primary purposes of Education'. Given that, it would be a gross error to believe that education is only about providing a broad education. Today it is also about its instrumental purposes too. Therefore we must equip learners with the skills, values and attitudes necessary to be competent and successful in the increasingly complex and changing environments they will encounter.

Much of what is necessary in terms of producing successful learners is part of contemporary practice or at least it is an expectation that students are experiencing such learning. Therefore an appraisal of classroom practices in terms of cooperative learning and problem solving will come some way to determine the level of training and development necessary to provide learners with the essential tools to be successful learners and users of technology.

Technology in learning is essentially about harnessing technology to complement and enhance current teaching practices. Technology is not an answer in itself, it is not the new learning panacea. However it can provide education with the opportunity to critically reflect on what schools do and could do, genuinely emancipating learners from the many orthodoxies that restrict learning. And so empower learners in order that they come some way towards reaching their potential.

The rhetoric in the school - home partnership remains. To ensure success in transforming schools and learning we must not only provide realistic funding for teacher training but we must support parents through genuine programs to enhance parent knowledge about learning and the place of technology in learning. Programs to date have been token or at best, isolated. Of course if we are serious about establishing learning from the beginning we must support all homes from when the learner first arrives home.

Schools often ignore the prior knowledge students possess. Many children bring sophisticated knowledge about, and experience with, technology.

The failure of education systems to address the training needs of all those responsible for supporting learners must be addressed by school leaders.

" The online world is likely to confront parents with issues that may well challenge many of their values and prejudices. Those (Parents) who wish to remain relevant sources of direction and wisdom for their children in the online world will need to bring a healthy dose of humility and openness to change ". (Petre; 1996, 120)

" Being a good parent in the online world is ultimately no different from being a good parent in the physical world. The essence is providing children guidance and advice and leading them to experiences that will help them build their own judgment and values ". (Petre; 1996, 122)

Leaders must transform learning so that schools feel more like places of higher order learning activities than the pejorative notion of ' traditional schooling'. We must take out of school what it is that makes it seem like school, when it is relevant learning and preparation for the future which is needed. Students must exit our schools with a strong value base, equipped with the tools and skills needed to negotiate the future and a sense of responsibility and interconnectedness to humanity and the finite physical world.

" Critical literacy is our main concern. Anybody can put anything on the Internet. We need to empower our children to question the information they receive ".(ACSSO/ APC Forum, 1997)

LEARNERS :

Learners like teachers and parents, have different capacities and ways to learn. The organisation of modern formal schooling owes much to the 'factory notion' on which it is based. In the Post

Modernist Information Age we find the traditional school organisation unable to meet the needs of learners, yet essentially learners continue to experience learning of a more traditional mode rather than the one that's been advocated in the literature and education system documents for most of the later part of this century.

The use of technology in learning provides the opportunities for students to develop other tools to help them learn in a more active way. Moreover it is now possible to actualise individualised learning in a way that will have learners not only being more responsible for their learning journeys but having an active part in determining their learning needs. Student centred learning with authentic assessment and student self evaluation can move from being largely an elusive notion to a reality driving learners forward.

Imagine students with support from home and school being increasingly able to have a voice in the planning of their own learning and assessing their progress. Being able to learn what they need and want. The culture of learning would be transformed, producing learning outcomes the likes of which have never been seen before.

Already there are a few schools showing us the way we need to go. Where all children have the skills and access to the tools of the information age. Schools that actively encourage children to link into their teacher's class program and the resources available on their intra-net to assist in the completion of assignments, all from the comfort of home. The skilling of children in using the tools to create multi-media products to a standard that is professional. Meaningful reading activities that develop sound reading strategies and the development of critical literacy. As leaders, we can help shape the type of learning that students experience, learning that is empowering. Now is the time to do it.

SHAPING :

Summer Hill Public School is like many school communities. It is trying hard to grapple with the difficult task of changing the way members of the school community think about learners and learning. What kind of learning and learners do we need for our very survival in the future. The welfare of individuals and the welfare of the whole community will be well served by us all critically reflecting on how well our current practices are serving tomorrow's citizens.

As a school we have had enthusiastic staff doing their utmost to familiarise students with technology in learning. Implementation of and use of computers in the classroom has ranged from high order use to remaining disconnected and collecting dust. Like most schools we were at significantly different levels of comfortableness and skill levels. In spite of detailed management or whole school development plans, we seemed to be going nowhere. We seemed to struggle with all the typical problems emanating from fear of computers and the ownership of power within the school generally and the redistribution of power within the learning partnership. Educational orthodoxies were alive and well and doing their best to reject change. It takes a lot of risk for teachers to shift from their tradition role as controller of learning to co-learner and facilitator.

There has been a recent significant shift in integrating technology as a strategy in learning within our school. I believe this has three major sources. Over a long period of time teachers have slowly developed an awareness that technology in learning was both inevitable and a given feature of the landscape of the learning environment of the future. The vision of a confident school leader who has been able to articulate his vision of technology of learning into one that is now collectively owned and articulated by the staff and the school community. Importantly the leader has been able to garner support for this vision in a non-judgmental way, decreasing stress and increasing and encouraging risk taking as a value.

Summer Hill has chosen to look at only two pieces of software to date. Grades: K-2 are utilising Kidpics to support their work in literacy. Grades:3-6 are using Hyperstudio to support learning in Human Society and its Environment (i.e Social Studies/Social Science). The teachers use their time honoured skills in teaching. This is combined with an increased emphasis on training students in cooperative learning skills, so that they can collaborate and use their computer skills as learning tools to write programs to demonstrate their learning, sharing such with a variety of audiences. Visitors to our school have already passed on positive comments of student and colleague's excellent work. The revolution of using technology in learning is a quite one but through the school's Technology Plan and the hard working Technology Planing Group there is continual developments.

Kidpics has been well received by the younger students at Summer Hill. The children are excited at being able to write and illustrate their own work and customise the sounds as well.

Hyperstudio has become a significant tool to introduce students to both a variety of hardware and program writing, using the very learning fields they have been studying. In addition the final product not only expands their skills but boosts their self confidence and their sense of self as a successful learner.

The average age of the staff is typical of that for the teaching service. This represents significant teaching experience and expertise and yet, also represents a challenge for the teachers to incorporate the evolving notions of techno-pedagogy and the unrelenting nature of change in their work.

The school has approached the task of making all staff,computer comfortable and literate, through the following strategies :

*Ensure an equitable distribution of computer hardware and peripherals.
*Identify school-based capable/confident staff and use them to peer tutor colleagues, whilst providing capable staff with access to additional equipment and training as required.
*Use the staff's daily letter at the signing on book to keep staff up to date with school wide computer happenings including internal and external training opportunities.
* Identify and seek out parent expertise in technology and use accordingly. Roles can include class-based computer helper, staff training, hardware trouble shooter and a source of additional hardware.
*Include a technology focus in the school's staff meeting and training cycle.
*Become very friendly with your capable local department technology person who can both trouble-shoot and be the font of much information.
*Hire a computer expert to provide consulting and servicing of hardware and access to knowledge and inexpensive equipment. This will also increase staff confidence with reliable and working hardware.
*Develop a school wide technology plan that has been collectively developed and is promulgated across the school community.
*Ensure a technology planning meeting that has capable and motivated personnel who meet regularly to monitor progress of the technology in learning thrust.

*Put funds aside to release staff who can support other staff to provide frequent class-based support.
*Recognise that using a computer as a learning tool will necessitate a reconfiguration and related expenditures in the placement of power points and cables.
*Identify an area of the library for a network of computers.

*Ensure sufficient furniture for the hardware to be placed upon.
*Conduct meetings for parents both in the day and at night to provide shared understandings about technology in learning and other training and development.
*Use the school's newsletter to inform the school community of the school's technology development and courses available for training.

DESTINATION :

What does learning need to look like ? What do learners need in order to be fulfilled and successful at learning in the future ? Essentially, to be well skilled in self learning techniques including literacy in relevant technologies are critical attributes we need to see in future learners. Combined with an ethical base to inform their decisions and good people skills, we can then be in a position to believe we have reached the initial destination in our quest to make schools support learners for the future. Leaders must work with their teams to make this happen. We are only at the beginning of a learning revolution and we can play a part in making colleagues and parents included in this exciting time. Good luck!

Think Globally…Act Locally : creating an online community using eGroups - a hosted email list provider

Nicole Sprainger : Teacher Librarian, St Matthew's School, Windsor

Abstract: They say the simplest ideas are always the best. The session will describe the use of an automated email Listserv which is readily available on the Internet to set up an online community for a local teacher librarian network. The concept is readily transferable to professional associations, subject associations or any group of students or teachers with a common interest. Participants will also learn about the features available to simplify and enhance group communications including: an automated Calendar which sends event reminder notices; a Vault for storing useful documents; a Links section where favourite web links can be stored; even a chat room. The session will also provide details of how to set up an e-group and the role of moderator. Come along and find out just how easy communication can be!

They say the simplest ideas are always the best and this one's a beauty! **It's not an original**. I first heard about the concept from another Teacher Librarian, Brian Ralph, from St Agnes School at Rooty Hill, who started a similar email discussion group for secondary teacher librarians in our diocese last year. I loved the idea and decided to offer it to the members of our local primary teacher librarian community. My reasons for starting an egroup were twofold

Communication in our diocese between network meetings was often difficult. Our main vehicle was the term newsletter. Organising to send out the agenda for meetings meant standing by the fax machine for considerable periods of time - even if the load was shared amongst committee members. Trying to contact people by phone in school hours is virtually impossible - as you know!!! There had to be a better way!

My second reason was my desire to encourage some of my colleagues to engage in online professional communication. For the past few years, I have been a devotee of OZTL_NET, an Internet Listserv which provides a national forum for professional discussion and the exchange of information and ideas between Australian teacher librarians. Many teacher librarians have embraced this forum and have claimed it to be a wonderful antidote to professional or geographical isolation. For me too, the very act of participation has upskilled me in the use of email communications. I can now organise my messages into folders; send files as attachments; even add a signature file to my messages. **A classic case of learning by doing!** However, as the Listserv has grown, I have had the sense that many less assured users of technology felt a little daunted by the prospect of joining such a large confident community. They were reluctant to appear foolish or fearful of making a mistake.

A smaller local egroup seemed to be the answer to both my problems but the thought of how to go about setting one up and keeping it happening seemed daunting. I had no idea how to go about it. Nevertheless after talking to Brian, and participating in his group for a time I decided this year to give it a go.

WHAT ARE eGroups?

eGroups are the easiest way for groups to communicate. There are a number of different email list host services available on the Internet, but the one I have been using is named **eGroups.** They provide a fully automated email list hosting service which is simple to use and easy to administer. eGroup members can participate via standard email or by using the Web interface.

SETTING UP AN egroup

Before starting your group, you need to **determine policy**, to decide if you wish membership of your group to be open or closed, moderated or unmoderated. Then **visit the eGroups website** http://www.egroups.com , fill in the online application form and create a welcome message. **Hey Presto** your group is created and ready to go. Have the email addresses of a few interested colleagues and **send your first invitations**.

COSTS

The service is free, provided you are willing to have some advertising appear at the end of messages. Otherwise it is a user pays system.

PROMOTING YOUR egroup

To promote your e-group, prepare a flyer explaining the purpose of your egroup, policy and method of subscribing. You may also need to follow up on outstanding invitations and encourage members to invite their friends and colleagues to join. At times you may also need to send messages to the list to spark some discussion and encourage others to contribute.

FEATURES

There are a number of features of the eGroups service which facilitate communication. Firstly, they are **easy to set up. Membership is controlled** by your policy and the list may be open or closed. For our purposes we chose a closed list to build confidence and maximise participation Because the forum is restricted to members of our network, they can feel confident about posting messages, requesting help or even promoting resources and ideas which work well for them. The main aim was to maintain collegiality, to give a sense that posting a message is just like chatting to others at one of our meetings.

The service itself is **fully automated** and there is **no software to install** . Messages are sent via email. Messages are posted individually or a **digest option** is available for groups with heavy traffic. The service is **prompt and reliable** with messages delivered almost instantaneously. There is **Spam protection** and messages may be moderated. As part of the service, each group is also provided with a **web presence** and members may read and post messages using the website.

BONUS FEATURES

The web presence also provides a number of features which greatly enhance communication. There is a **message archive** to allow members to read past messages and also locate a **member's list** which includes their email addresses. Another wonderful feature is the **Calendar of Events** which can be instructed to automatically send members **reminder messages** for upcoming events. In addition there is a **Vault** where members can **upload documents** of interest to the group such as newsletters, contacts lists. There is also a place where you can **store weblinks** in folders. Other facilities include a **chat room** and **polling facility**.

ROLE OF egroup MANAGER

Setting up and managing the eGroup has been an interesting and relatively pain free learning experience. After one term, our membership is growing steadily and we now have approximately 30 members. Unfortunately a number of our network members do not yet have online access so have been unable to participate. We look forward to full representation,(55 schools) when those schools, who do not yet have Internet access, come online as part of the Diocesan wide infrastructure initiatives. Although most members are still a little reluctant to post messages, they are all very positive about the ease of communication and the collegiality.

In terms of administration, occasional problems have occurred, but online help is available. If further assistance is required , reliable, timely support is available by email. I would not hesitate in recommending this utility . So ,

DON'T DELAY - start planning now to start your own eGroup

The Laptop Programme at Central Coast Grammar School

Keith Vallis: Central Coast Grammar School

Introduction

The Laptop Computer Programme at Central Coast Grammar School is now in its fourth year, having started with Year 5 students mid-way through 1995. Currently, approximately 360 students in Years 5 to 8 bring their laptop computers to and from school each day. The programme is viewed as one of technology immersion, intended to empower our students to

- become totally familiar and relaxed with this powerful tool for learning
- utilise the computer as a tool to support learning in traditional curriculum areas
- explore and experience new skills and opportunities and, most importantly, new ways of learning them.

It's not enough to us to be able to claim 'computer literate' students as the major outcome of our programme. Our goal is to find better ways to teach what we have traditionally, and to actively seek new and different areas of learning and thinking to explore. Our focus is not simply on word processors and spreadsheets. We are seeking to empower our students and teachers to use their technological tools to explore, to take risks, to gather and manipulate data, to think critically and apply their knowledge in new and creative ways.

It's important to us to focus on what is called 'the basics' in education, but to do it in a more efficient manner. It's important to us that we offer experiences that cater for a range of learning styles. It's important that we challenge our students, and that we prepare them for life in a technologically challenging world. It's most important that we can demonstrate new ways of learning and new things to be learned that were not so easily possible without the use of computers.

Curriculum

We seek to use computers in all subject areas to support traditional learning activities and to promote new ways of thinking and learning. There is no prescribed computer curriculum as such in our laptop years. We do have a set of basic computer competencies we expect students to achieve at each grade level (see Scope and Sequence chart), but we stress that these are minimum competencies only. We expect that most students will achieve these competencies before the required time, and will in fact move well beyond them in their areas of personal interest.

The programme coordinator works with individual teachers or groups of teachers to integrate specific computer based projects into existing areas of learning.

Pedagogical Issues

Computing Skills

Computing skills are taught in the context of all curriculum areas. In years 5 and 6 this is a little easier than in the Senior School, as teachers have a clearer overview of the whole learning programme and spend extended periods of time with their students. In the Senior School all teachers reinforce the skills of word processing, with an obvious emphasis from those subjects requiring written assignments, and similarly for all teachers to reinforce and extend the skills of database and spreadsheet use.

Students do not move into Senior School knowing all they need to know about these applications, and all teachers seek to consolidate and extend the skills of their students. For example, Art teachers and Design and Technology teachers focus on drawing, image manipulation, processing and design applications. Music teachers use composition and accompaniment programmes. Social Science teachers look to information gathering, analysis and synthesis. Maths teachers use the power of the computer to illustrate concepts in geometry, explore constructions, manipulate shapes, perform calculations and for individually-paced drill and practice of maths basics. Science teachers incorporate the database and spreadsheet skills of other subject areas, and introduce skills of data gathering and analysis using computer related probes and simulations. Language teachers use multimedia tools to assist in instruction, and English teachers use the power of the word processor to enhance the writing process.

The Internet and World Wide Web, via our school network and in conjunction with our Library/Resource Centre, play an increasingly important role in all of this. Our Library staff enthusiastically acknowledge their roles as 'Cybrarians', and embrace the concept of our students as true 'knowledge navigators'. The Internet is but one of the research tools available to our students, and teachers of all subjects work closely with library staff to encourage careful and well-planned research strategies.

Keyboarding skills and word processing attract special attention in Years 5 and 6, where children are encouraged to achieve certain minimum competencies.

Keyboarding Skills

Keyboarding skills are taught for a minimum of ten minutes per day in terms one and two of Years 5 and 6, and reduce to two to three ten-minute periods per week for terms three and four. The main goal of instruction here is to achieve good typing habits. Students aim to type 25wpm by the end of Year 5 and 35wpm by the end of Year 6.

Word Processing

Our goal in teaching word processing in Years 5 and 6 is to get students to the point where they are comfortable and competent in using the computer as a tool to enhance their writing and presentation skills. Teachers will at times give specific lessons in word processing, but these will generally be within the context of existing writing tasks. Minimum competencies for word processing are set out in the scope and sequence chart (see Appendix 1 which is available as a separate file on the conference CD).

Usage

We do not set out to use laptops in every lesson of every day, although on some days we will. Not all students will need to use their computer at the same time or for the same task, although at times they will.

While we aim to utilise the power of the word processor to enhance the writing process, if a child's handwriting is problematical he/she may well be required to write while others type. Conversely, parents and teachers may deem it appropriate for a child whose creative writing is being held back by difficulties with handwriting to be allowed or encouraged or required to use the word processor to enhance the creative aspect of the work or to improve the self-esteem of the child. There are no hard and fast rules in this area; the only principle involved is that of what is best for that particular child at that particular stage; and the parents and classroom teacher are best placed to take appropriate decisions as needs arise.

Internet

Use of the Internet is encouraged. All rooms at CCGS are networked, and mini-hubs are used within rooms to facilitate network connection. More recent laptops come with a network or network/modem card included. Owners of older laptops use external network adapters that are available in each room. The skills of information gathering, sorting, analysing and synthesising are crucial, and we seek to promote them. All students and parents sign an 'Acceptable Use' document in the child's school diary. Internet use is centrally monitored via the School's proxy server, and we are in the process of trialing various pieces of filtering software.

Room Layout

Safety is the first consideration. Flexibility is the second.

Each laptop homeroom in the Prep School has at least one desktop computer connected to a wall-mounted TV and VCR with a good quality TV Encoder (scan converter). A printer and possibly a scanner are connected to this computer. Computer procedures can be videotaped, and children can bring their floppy disks to the desktop computer to print.

All Senior School classrooms where laptops are used aim to have a good quality encoder with desktop computer and network connection. Printers are generally available in rooms, the Resource Centre, and on the School network.

Refer to the section on 'Safety', for details on electricity related requirements.

Classrooms are set-out in a variety of ways according to the needs of the lesson. When using laptops, due regards are given to

- ease of access to network points
- groupwork
- positioning of cords and cables
- printers being away from busy areas

Implementation Policies

Staff Training and Support

Staff are encouraged to purchase their own laptops, and may do so at 50% of the normal purchase price. Teachers are provided with opportunities to update and upgrade their skills via internal and external courses. In addition, the programme coordinator is available to plan and facilitate lessons in conjunction with classroom teachers and specialists.

Bridging Courses

A four-day bridging course is offered during January for new students in Year 6 onwards.

Purchasing of Consumables

One ream of paper and one box of IBM formatted disks is included on the textbook and equipment list for students in the programme. Paper is stored in Year 5 and 6 classrooms for easy access, and in the laptop office for Senior school.

Printer cartridges are purchased in bulk by the Laptop Coordinator, and are purchased by school departments via a purchase requisition to the Coordinator.

Repairs

All repairs are requested through the school technician by completing a repair request form. The School employs a full-time laptop technician. Computelec, our laptop supplier, provides a technician who at the school two days each week.

A 'disk image' of each model laptop configuration is kept on CD to facilitate software repair. Students are required to backup all important files.

The school technician determines whether the repair is to be completed under warranty or insurance, and proceeds accordingly. Insurance repairs are expedited if parents have pre-signed the insurance proxy claim form that is issued when a student joins the programme. Loan machines are issued to students to replace a machine in for repair for an extended time.

Student Maintenance and Virus Protection

Students are trained in the routine maintenance of their equipment and reminded to undertake upkeep routines such as 'Scan Disk' and 'Defrag' regularly. 'Virus Buster' is installed on all computers and regularly updated by the school technician.

Safety

Safety is a major concern for all those involved in the programme.

Power Outlets

Residual current devices protect all power points in the school. These are tested each semester by the technician or Laptop Coordinator (reporting to the IT Manager) and verified annually by a licenced electrician.

Connecting To Power

Extreme care is taken by students and teachers when connecting to power points in rooms. Whilst the use of power boards is unavoidable, care is taken to position tables so that cables or leads are not strung across walkways or anywhere near water. When using laptops outside, only battery power is used.

Cable and Equipment Check

Students should check their cables for wear and tear each time they are used, before they are plugged in.

First Aid

First Aid in the treatment of electric shock is taught as part of the PD/Health programme at the beginning of Years 5, 6 and 7, and revised at the beginning of second semester each year.

Copyright

Central Coast Grammar School strives to have only legally purchased copies of software on school related machines. Students are required to respect this policy. All software that is purchased for school use is catalogued in the Resource Centre (Library), and copies of site licences are held therein.

Many of our software products are Freeware or Shareware, and the Laptop Coordinator negotiates licencing agreements with the owners of such products. Copies of these agreements are held in the Resource Centre.

Storage and Transportation

Before School

Prep students place their computers inside the classroom in the security cupboards on arrival, or as soon as classrooms have been opened.

After School

Laptops are taken home each and every afternoon.

General

Students store their laptops inside their school bags while travelling to and from school. Students should not use their laptops in public places, such as trains buses and bus stops.

Before and after school, at recess and lunchtime students use laptops for printing or completing work, in designated areas. Games are only to be played outside of class time, unless they are part of the teaching curriculum and the teacher has given permission to use them. The responsibility for the laptop in and out of the classroom is that of the student.

If laptops are to be left in the classroom between lessons or over recess/lunch times the classroom is to be securely locked. In the senior school students can lock their laptops in their lockers during school time. Black carry bags, spare batteries, floppy drives and power cords are all the students' responsibility and they need to be kept in a secure place when not in use.

Control Panel Settings

Personal screen savers are acceptable provided they are not offensive and do not portray any offensive material. Settings must have a good contrast in print and be easy to read. Students should use black print - it saves print cartridges.

Batteries

Batteries are to be fully charged for the commencement of the school day.

Microphones

Microphones are not to be used unless permission has been sought before the commencement of the lesson, or unless requested by the class teacher.

Software

Microsoft Office is the basic suite that we use, and it comes pre-loaded on all laptops purchased or leased through the school. Also pre-loaded on laptops is

17. Microworlds
18. Toshiba's SchoolKit
19. Novell network client
20. School printer drivers
21. Shortcuts to various components of our school network
22. Adobe Acrobat Reader
23. Super Spell shell
24. Typing Master by Aquarian Technologies
25. Netscape Communicator with profiles set for school and home use
26. Gif Animator by Microsoft
27. Maths Circus, WinPlot, WinStat, WinGeom, Geometer's Sketchpad, Brain Builder, Maths Function Mania, Prime Time Math, RomanTic,
28. Noteworthy Composer and Noteworthy Player, Alfred's Music Achievement Series, Alfred's Music Theory Games

The list of other software we use is steadily growing. One of the larger problems we encounter with administering a laptop programme is the negotiation of site licences for student owned laptops. Software companies are slowly coming to grips with the situation, and it is becoming easier.

Some software titles lend themselves to being available only on our network, and are easily 'tracked' in this way. Others need to be loaded to students laptops so that can be accessed at home or while not on the network. Other titles, CD encyclopedias for example, are best available both on the network and in hard copy.

Web Whacking

We are constantly trialling pieces of software from the Internet, and add to the above list all the time. We've also been exploring 'web whacking' appropriate sites for use in Science and History, and loading the cached sites to student laptops as an additional research tool. This is a time consuming process as appropriate permissions must be obtained for all sites used in such a way, but it is proving a valuable complement to teaching programme.

Texts On CD

This year we've trialled the use of both Maths and Science texts in digital format. These are initially provided on CD, but can be loaded separately to students' laptops. The Adobe pdf format is the one used, and it is proving to be very successful. We deal with both Bite Technology and Nelson Publishing, for Science and Maths respectively. This format has proved to be superior to traditional texts for a number of reasons.

- The text is instantly searchable with a 'hot-linked' index
- Messages, notes, homework assignments etc. can be embedded by teachers ahead of time
- Internet 'hot-links' can also be included, and point students directly to relevant sites for research or extension
- MS Office activities can also be embedded, and will open with a simple double-click. Spreadsheet or table completion activities, for example, can be pre-set to open on demand.
- Pages can be easily enlarged, for visually impaired users.

In time we can see expanded uses for this tool, including links to specific software titles and cached Internet material. Interactive Java Applets also look like an interesting addition to this approach.

Conclusion

One of the most interesting things I've observed about laptop classrooms is the change in the style of learning that the presence of the laptops facilitates. Contrary to some widely held beliefs, laptop rooms can be very noisy places, but in a very interactive and productive way. Problems arise and are solved in a collaborative fashion. By the very nature of the technology, students often have opportunities to demonstrate greater knowledge than their teacher, even if only in a specific aspect of a piece of software. Handled positively by the teacher, such interactions help to promote a healthy, vibrant, cooperative learning environment. Risks are taken, failures are shared, and learning becomes a genuinely shared journey.

The constant availability of laptops also gives students and teachers opportunities to explore learning and teaching in different ways. How often do we see a tremendous piece of software demonstrated, only to see its use go begging because the teacher cannot get enough students 'on it' simultaneously. Licencing problems aside, a laptop programme overcomes this problem.

New ways of doing old things is what I constantly look for. Animated Gifs bring a whole new dimension to drawing and sketching, as does the power of image manipulation tools to artistic expression. Musical composition is taken to another level with programs like Noteworthy; at last our students can 'see' and hear their music instantly, just as the great composers have done in their minds for centuries. Mathematical and geometric relations are much more easily understood when they can be manipulated and demonstrated in real time on the computer screen. Graphs can be observed to grow and change in direct relationship to data. The list goes on.

All such applications of the computer as a learning tool serve to underline the value of portable student computer programme. Our students are fortunate enough to be able to access this powerful tool anywhere and at any time.

21st Century Bedrooms

Joanne Webster: Truscott St PS Learning Community

Abstract: Was there ever a time more appropriate for pedagogical change? Students burn the midnight oil chatting to friends in distant places, publishing web pages whilst researching essays and beating their last Nintendo scores, only to walk - bleary eyed into schools their Grandparents could almost recognise as their own. Almost.

The Staff and Parents at Truscott St PS have acknowledged these disparate worlds our children inhabit and have come together to create a future with them in which technology is intrinsic to the daily work of learning. Turn the WWW upside down, and what do you have? MMM - mentors, methodology and multimedia madness!

First, a little on the educational setting. Truscott St PS is situated in North Ryde - Sydney's Silicon Valley. We have 280 students some of whom are predominantly educated in our Physical Support Unit. Our 29 staff includes administration, teachers aides, teachers, executive, support teacher learning difficulties and school counsellor. Teaching staff range between two recently appointed merit graduates, to a soon to retire Kindergarten specialist. The site has two main blocks joined by a 77m-covered walkway. All classrooms have a large storeroom, and share a designated wet area with sinks, cupboards and a large table as basic features. Classrooms are airy, with large windows on both sides overlooking trees and playground spaces. Interestingly, 78% of the school's rooms look to the Microsoft building, which towers above the leafy suburbs in between. (We haven't asked them yet whether they can see us!)

The vision of education that Truscott St holds is "A fair go for all". Our bumper sticker reads "A street ahead of the rest!". Underpinning our curriculum are skills of critical thinking. Teachers utilise CoRT thinking, PMI, Six Thinking Hats, Blooms Taxonomy, 4MAT and problem solving approaches to daily teaching and learning tasks. Our week includes 45 minutes of multiage peer tutoring with year 5/6 leaders, CAPA groups (dance group, choir, music, Italian and other drama, StageStruck multimedia play authoring, performance gymnastics) and K-6 assembly led by rostered classes across the school. We have a focus of student welfare. Our Student Representative Council participates in many school based decisions, as well as actioning requests from the student body. SRC students are empowered to make change as they see appropriate to improve their learning and location.

This vision led to the investigation and development of a strategic technology plan involving our learning community - all staff, SRC students and parents. Our local member, now Minister for Fair Trading John Watkins has attended our breakfast meetings and planning day with an interest, in both the teamwork of our learning community and our wish to establish links with our local information technology (IT) centres. The District Technology Adviser Stanislaw Wawrzyniak plays a key role in providing departmental knowledge, policy and planning advice and links with other school projects and trials. Parent IT meetings have been also held monthly prior to P & C to update, discuss and reconsider recent developments in the project. We have a number of parents with specialist educational and technology expertise.

The strategic technology planning process has provided a focus for the future reaching program whereby the traditional curriculum approach has been discarded and an integrated approach utilising IT has been developed. This new structure has as its first stages the following characteristics which are outlined below:

- IT Goals and Strategies;
- Whole School Project;
- Gathering of Baseline Data;
- Training for Staff, Parents, Students;
- Mentoring;
- Curriculum Restructure (stage 1);
- Communication;

IT Goals and Strategies

Having brainstormed many IT goals, the Learning Community structured four technology goals consistent to the school's approach to teaching and learning. These are:

- All students access Information technology to enhance learning and teaching across Key Learning Areas.
- Teacher, Parent, Student, Administration and Teacher's Aide will develop Training and Development in Information Technology.
- Establish links with the local IT community.
- Use of computer based technologies to locate, evaluate, access, manipulate, create, explore, store and retrieve information across the key learning areas.

Up to eight strategies to signpost each goal were then negotiated between the stakeholders at ensuing workshops until a journey for change was mapped and a first destination decided upon. IT Training.

Whole School Project

To provide focus, support and drive for the journey, the school has embarked on a project involving the whole school. "Australia - You're standing in IT". Teachers have pre-planned integrated Bloom's based units of work that facilitate knowledge and communication of learning through a variety of computer based technology as appropriate. An exciting range of topics has been created by each of the classes:

- Animals of Australia
- Food
- Sports
- Sportspeople
- Aboriginal Legends
- Antarctica
- Behaviour and Australian students
- Government and the A.C.T.
- Wonders of Australia
- Sydney our city
- Colours of Sydney

The individual topics will combine to provide the first of a series of web-based resources for the students of Truscott St PS and the wider international community. The Web Site and the CDROM, which will allow access for a broad percentage of our Learning Community, will be unveiled late in November in a whole school celebration of new learning and achievement.

Gathering of Baseline Data

Truscott St PS has made a researched decision to adopt Fourth Generation Evaluation Methodology (Guba and Lincoln, 1989). Based on the epistemology of constructivism, the method gives equal status to stakeholders in the innovation and empowers participants to focus the evaluative process in response to the project's demand. Qualitative and quantitative methods are being utilised to triangulate the integrity of the longitudinal data. To monitor attitudinal and skill development, the learning community will be regularly surveyed, interviewed and provided access to discussion forums. "The adoption of new core technologies requires the adoption of new ways of life, new organisational forms, and the modification or abandonment of cherished values, meanings and beliefs." (Schlechty, 1997)

It is imperative that all stakeholders in the initiative feel that they have the support of other stakeholders and the ability to negotiate change in the process if they see fit. (Data collection material provided as handouts at the 1999 Computer Educator Group Conference)

Training - Technology for Students, Parents, Staff (T.S.P.S.)

The training modules supporting the whole school project are loosely based on the highly successful Technology in Learning and Teaching (TILT) model designed through the NSW Department of Education and Training in 1994. One third of Truscott St teachers had participated in the TILT program during 1997 and 1998. Staff, parents and students had observed the change in technology expertise and curriculum integration of IT by the teachers and were keen to emulate a similar growth more broadly across the school community.

As the project is web based, six out of the seven training modules scaffold sequenced foundation web authoring skills. These are outlined below:

1. *Blast Off*
   Explicit operational support for computers and related information saving mechanisms, LitePro projector, fax, network and other printers, photocopiers
2. *Let's Create*
   Utilising Netscape Communicator's "Composer" application for word processing needs.
3. *World Wide Wisdom*
   Information processes, critical literacy, intellectual property, communication and manipulation of web products.
4. *Extra Bytes*
   Scanning and photography images formatted to integrate into web based products.
5. *Soft and Tasty*
   Additional web applications and multimedia software for creative information sharing.
6. *Multimedia Madness*
   Integrating .mpg video, .mid and .wav sound and .gif animations to support the information product.
7. *Getting Organised*
   Databases and spreadsheets.

Curriculum investigations and Bloom's Taxonomy for learning and teaching are given an equal weighting within the training program. All students need the challenge and opportunity to explore their own thinking styles in different ways. Critical and creative thinking is best taught in an integrated approach to curriculum delivery. Blooms Taxonomy has particular relevance to the integration of technology into classroom teaching. Bloom's provides the basis for many cognitive activities within the mainstream classroom, based on high level thinking skills. Learning environments at Truscott St PS are constructed to ensure students are encouraged to become independent, enthusiastic learners. This learning environment focuses on the processes of:

8. Knowledge: read, absorb, specify
9. Comprehension: restate, translate, interpret
10. Application: use, illustrate, classify
11. Analysis: investigate, explain, compare
12. Synthesis: plan, create, invent
13. Evaluation: judge, verify, recommend

Training spans a six month period for staff, who are allocated time for skills and curriculum support with their learning partners. Two groups of twelve students will participate in sessions during mid term three and term four, and parents in late term three, term four this year. Next year, it is envisaged that ongoing IT and curriculum support will occur in a form that responds to our Learning Community's needs.

Mentoring

Many schools IT projects have successfully applied mentoring techniques to scaffold the learning within the pedagogical environment (Dwyer, Ringstaff & Sandholtz, 1990, 1991; David, 1992; Ringstaff & Yocam, 1994; Stuebing, Celsi & Cousineau, 1994; Smith, 1998, 1999; Stager, 1999; Wasley, 1995; National Mentoring Partnership, 1999)

Truscott St PS already observes the empowering of student mentors within its peer tutoring, or friendship groups, and the Learning Community is keen to develop this methodology further. Stakeholders have been surveyed for developed IT expertise and willingness to support and share with others. As a result, twelve staff and parent mentors have been targetted to collaboratively facilitate individual training sessions and applications, as well as develop future student and parent mentors for future IT support.

A scaffold of curricula and IT outcomes have been invented by the learning community to assess the development of knowledge and information processes. All participants progress through a series of four stages of learning:

- Emergent
- Experimenter
- Manipulator
- Mentor

Learning stages are sequential within each training module. Any stakeholder will progress as their need dictates and as learning allows.

Curriculum Restructure (stage 1)

Increased curricula demands are blamed for a hankering in some quarters to a return to the "good old days". Schlechty (1997) reminds us that in 1870, Phelps proposed that ..."schools are little less than undisciplined juvenile mobs" and in 1892, Valentine purported "Many sage teachers scorn the old fashioned rudiments, and it seems to be regarded as between misfortune and a crime for a child to learn to read". Through technology and its learning processes, true learning and true change can occur. (Fullan, 1999; Sparks, 1998)

"Just as the railways were limited because they had to follow the established tracks, schools assume that print and teachers are the preferred or only sources of information are limited in their power to educate... Furthermore, the linear assumptions of the world of print undergird our system of schooling. The random assumptions of electronic information processing technology dominate the emerging reality within which education occurs." (Schlechty, 1997, p.32)

Through a structured sequence of integrated Bloom's based units of learning, it is

anticipated that the students will aquire a balanced development of outcomes based learning, responsive to their individual educational need. Truscott St staff is looking to the support of curriculum specialists in the mapping of each Key Learning Area.

Communication

Information is freely shared between stakeholders and others through a plethora of modes. At the school level, the fortnightly newsletter has a regular "Interesting Tech Bytes" (I.T.B.) column updating student, staff and parent technology occurrences, the foyer has an I.T.B. board to disseminate IT developments, and meetings for staff, students and parents are held between 8am and 7.30pm to allow a maximum of participants in the project to discuss and share ideas and concerns. Student Representative Council leaders are invited to all strategic and developmental planning sessions.

Within the District of the school, our innovation is shared at Technology Network meetings, TILT Hub group meetings and informal collegial networks as requested. We have also presented at the recent TechnoExpo '99 forum for members of the NSW Department of Education and Training Training and Development Directorate.

We have regular email contact with Gerry Smith, former Principal of River Oaks PS who will continue to work with us later in the year, and other IT pedagogues who have innovated effective IT and curriculum change in schools and Universities. Our website will be unveiled in November and will include curriculum and related data as well as the 'Whole School Project' units.

Where is the future?

The future is not some place that Truscott St PS is going to, but one that we are creating with enthusiasm and rigor. Researched methodologies and careful reflection of previous curricula and IT innovations give us direction. Careful negotiation, discussion and evaluation hone and focus this innovation that is our own.

This, the first of our reports has proposed what is and what is hoped to be. We are inventing a better school only to serve our core business better. Children's learning.

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